Soybean Digest

Official Publication

OF

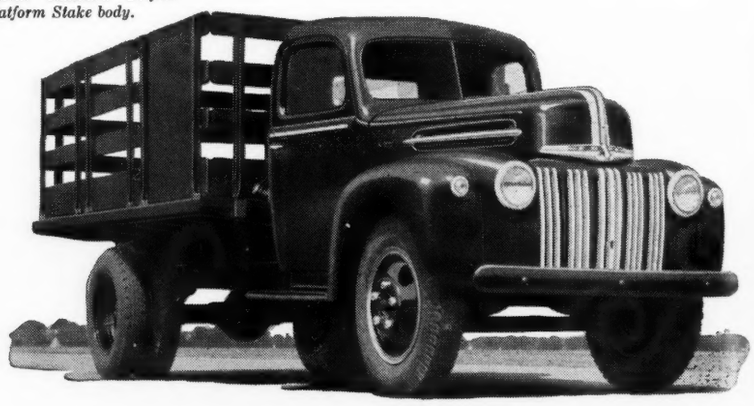
THE AMERICAN SOYBEAN ASSOCIATION

VOLUME 7 • NUMBER 1 NOVEMBER • 1946

REGISTRATIONS *SHOW* IT—OPERATORS *KNOW* IT!

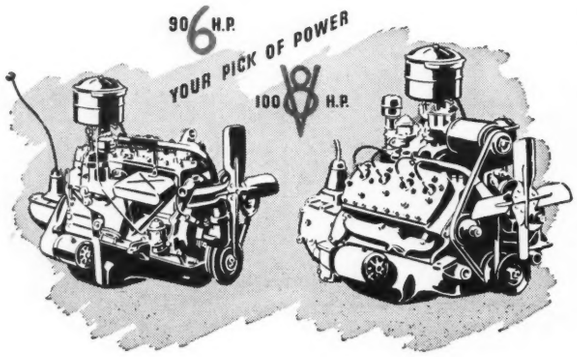
"FORD TRUCKS LAST LONGER!"

Ford Heavy Duty 1½-Ton, 158-inch wheelbase, with standard 12-foot Ford Platform Stake body.



One big reason—

FORD ENGINES STAND UP!



Ford Truck engines—either the famous 100-H.P. V-8 or the extra-thrifty 90-H.P. Six—are world-famous for endurance in severe service. Here are some reasons why: They're of time-proved L-head type, quiet, simple, efficient—hardened valve seat inserts resist pounding and pitting—precision-set valves need no adjusting—valve springs are shot-peened and rust-proofed for long life—Ford alloy cast steel crankshafts are balanced and counterbalanced for enduring smoothness—Flightlight aluminum alloy 4-ring pistons maintain good compression, save oil. Full pressure lubrication, with positive, large-capacity oil pumps, plus effective crankcase ventilation, scientifically correct cooling and efficient oil- and air-filtering, all prolong Ford engine life.

Ford

There are more than fifty such long-life features throughout Ford Truck engines and chassis. NO OTHER TRUCKS BRING YOU ALL THESE IMPORTANT PLUS VALUES AT ANY PRICE. It is the extra worth which Ford alone offers that makes Ford Trucks Last Longer. This extra value tells you clearly why 7 out of 11 of all Ford Trucks registered since 1928 are still in service—why more than half of all Ford Trucks on the job are at least nine years old!

The best way to get a new Ford Truck is to get your order in. See your Ford Dealer now.

FORD TRUCKS

MORE FORD TRUCKS IN USE TODAY THAN ANY OTHER MAKE

THE Soybean Digest

REG. U. S. PAT. OFF.

GEO. M. STRAYER, Editor KENT PELLETT, Managing Editor

Publishers' Representatives: Ewing Hutchison Co., Chicago

Vol. 7 NOVEMBER ☆ 1946 No. 1

Published on the 15th of each month at Hudson, Iowa, by the American Soybean Association. Entered as second class matter November 20, 1940, at the postoffice at Hudson, Iowa, under the Act of March 3, 1879. Forms close on 1st of month. Subscription price to association members. $1.50 per year; to non-members, $2.00 per year; Canada and other members of the Pan-American Union, $2.50; other foreign, $3.00.

IN THIS ISSUE

	Page
Editor's Desk	4
Founded Stalcy's at 50 — Rod Hendrickson	8
Fire Hazards in Soybean Processing — C. M. Park	10
Proteins in the Cow Country — D. O. Appleton	13
Tung Oil — S. R. Greer	14
Glidden to Market Lecithin	16
Soybean Base for Ford Enamels	17
Beans by Truck to Staleys	17
Marked Damage by Brown Stem Rot	17
China's Soybean Production Gains	18
Williams Milling Co. Plant	18
Roanoke in North Carolina	18
Allard Retires from USDA	20
American Oil Chemists Society Meets	21
Crop Report	22
Publications	26
Grits and Flakes	28
Washington Digest — Porter M. Hedge	32
Markets and Government Orders	36

THE AMERICAN SOYBEAN ASSOCIATION

OFFICERS: President, Walter W. McLaughlin, Decatur, Ill.; Vice President, J. B. Edmondson, Clayton, Ind.; Secretary-treasurer, Geo. M. Strayer, Hudson, Iowa.

DIRECTORS: Jacob Hartz, Stuttgart, Ark.; Walter W. McLaughlin, Decatur, Ill.; Frank S. Garwood, Stonington, Ill.; J. B. Edmondson, Clayton, Ind.; Ersel Walley, Fort Wayne, Ind.; Geo. M. Strayer, Hudson, Iowa; Howard L. Roach, Plainfield, Iowa; John W. Evans, Montevideo, Minn.; Harry A. Plattner, Malta Bend, Mo.; L. S. Stoner, Holly Bluffs, Miss.; G. C. McIlroy, Irwin, Ohio; W. G. Weigle, Van Wert, Ohio; and John Dries, Saukville, Wis.

Puritan
Manufacturing Co.

SPECIALIZED MILLING SERVICE

for

Soya Beans — Flour — Feed

Roll Grinding and Corrugating
Leather-Rubber-Cotton Belting
Chain and "V" Belt Drives
Cyclone Metal Dust Collectors
Gears cut to order (Midwests' only gear cutting Plant)

LET US DO YOUR ROLL WORK

Latest style cuts
Prompt Service

1931 North 11th Street
Omaha Nebraska

MARIANNA
SALES COMPANY

MEMPHIS 1, TENN.

Dealers in

Soybean and Cottonseed Products

Brokers in

Soybean and Cottonseed Meal Futures

Members

Memphis Merchants Exchange
American Feed Manufacturers Association

Tel. 55707 L. D. 364

EDITOR'S DESK

Time to Go Slow In that wild orgy of buying which took place immediately after October 17 even the unpredictable took place. Prices of soybeans, soybean oil and soybean oil meal jumped far beyond their wartime levels. Some rather high priced beans and meal were traded. In the interval which followed, prices began to stabilize themselves, as was expected.

The true value of a bushel of soybeans is determined by the value of the meal and the oil. The value of those commodities is dependent on livestock prices, and on competitive oils. Proteins and edible fats were held at abnormally low levels by ceiling prices. When those ceilings were removed, prices bounced way up.

It is our hope that the price levels of all three commodities will stabilize themselves at reasonable levels. Over a period of time it benefits a soybean grower or processor not to demand prices which are out of proportion. We want the products of the soybean industry used. Our hope lies in larger acreages selling at reasonable prices, returning the grower, the handler and the processor a profit, and enabling the user to make a similar profit.

Soybeans at $3.05 per bushel are out of proportion, considering other prices today. Let's settle our speculative tendencies and build on solid ground. That means keeping soybeans in their correct relationship to corn, to hogs, to other edible fats and oils. Let's be sensible in our soybean transactions during the coming months. Let's remember that for every boom there is a bust. The boom is here. The bust may be on the way in now, judging by raw cotton prices. Let's hold it to a minimum in the soybean industry.

Just in Passing This is a notable issue of the *Soybean Digest*, in at least two ways. We chronicle the final end of wartime governmental controls and the beginning of a new era. And we celebrate our 6th birthday. Perhaps it is fitting that the two events be announced together . . . Our first issue, 16 pages of it, came off the press just 6 years ago. That was 14 issues in advance of Pearl Harbor . . . The war offered the still small soybean industry a great challenge and an opportunity. We have taken some pride in chronicling in our pages from month to month how well both were met . . . Your publication had problems also. We had to try to meet rapidly increasing demands on our space although hampered by an extremely small paper quota made necessary by the war. Your editor spent almost 2 years of our first 6 in the armed services . . . The *Digest* has been a war baby. But we are happy to do our growing up in peace time.

THIS LOSS MIGHT HAVE BEEN AVOIDED

Announcement of the lifting of ceiling prices on soybeans came at a most unfortunate time for many growers. In some areas the major portion of the crop had already been harvested and sold. The efficient producer in those areas—the man who got his soybean crop into the ground early in the spring and then harvested it early in the fall—was the man who was penalized.

There have been charges and counter-charges hurled since October 17. The man who owned soybeans on that date, and who had not sold them found values increasing in spite of himself. If half the crop had been sold on that date, as some people contend, then the holders of that 75 million bushels of beans made approximately 75 million dollars.

But the entire solution is not that easy. Growers had contracted beans to elevators. The elevator manager, in turn, had contracted them to a processor. The processor, to protect himself, had contracted his oil meal and his oil. Who made the money?

The entire farce, very apparently, must be charged up to political expediency. Neither the grower, the handler, or the processor—the three main segments of the soybean industry—was responsible for or profited greatly from the sudden and unexpected removal of the ceilings.

There is, in our estimation, a moral to the story. Governmental controls of the soybean industry are gone. They are destined, we believe, to remain off. We must classify them as history, and develop for the soybean industry a sound marketing system. Farm storage must be provided to the point where it will adequately handle a good portion of the crop. During the war years we have formed the habit of marketing the entire soybean crop, or a major portion of it, in the period of 4 or 6 weeks in which the crop is harvested.

So long as such a marketing system prevails soybean growers will never realize full value from their crop. Until we provide on the farms, or in local grain elevators or terminal storage facilities, adequate storage for at least 50% of the soybean crop, the average price paid for soybeans will remain low. No marketing system based on supply and demand will pay maximum prices for a crop marketed in a haphazard fashion in one small interval, when the processing operation is conducted over the entire year's period.

The man who put his early beans in farm storage this year profited thereby. Over a period of years he will continue to do so. The smart soybean grower will provide storage capacity for each year's crop. The soybean industry will profit by his doing so. Therein lies the moral to developments following the removal of price ceilings.

ASA WILL PUBLISH A YEARBOOK

During recent years the need for a yearbook or handbook of the American soybean industry has become increasingly evident. Thousands of people and hundreds of millions of dollars are now involved in the newest of America's important agricultural crops.

Statistical information on the soybean crop has been scattered. Information on the utilization of soybean oil and meal has been rather unavailable; sources of supply of soybean food products have not been generally known; production of soybeans by states and years had not been assembled into recent volumes; there has been no one place where soybean statistical and informational material has been brought together on an annual basis.

Thousands of requests for information have poured into the American Soybean Association offices. Many sources of information have been called upon for assistance. Assembling of facts pertaining to the soybean industry was started with publication of the initial copy of the *Soybean Digest* in 1940.

Now the soybean industry is to have a yearbook—a reference book—to be known as the *Soybean Blue Book*. Assembled within its covers will be all the factual and statistical information on soybeans which can be squeezed into one volume. Scheduled for distribution about March 1, 1947, the publication was authorized by the Board of Directors of the American Soybean Association at its winter meeting in 1945. Paper shortages, together with the large amount of time involved in assembling the statistical and factual material, dictated early 1947 publication—of the first issue.

Pocket size, the yearbook will be available to members of the American Soybean Association, processors, seedsmen, grain dealers, other persons interested in the industry. Annual publication on the same date is planned. Further details will be carried in later issues of the *Soybean Digest*.

EUGENE STALEY HATED FARMING —

FOUNDED STALEY'S AT 50!

Rod Hendrickson in "This Business of Living" on WEAF, New York City:

"We hear so much about the age of gray-hair—the age when we of 50 are supposed to be slowing down with hints on all sides that our places are being taken by the young and up-and-coming and we'd better look for a soft spot to light.

"Well — let's take a look. I assure you I have seen some very potent examples that Life begins at 50.

"We are about to tell you a story about ONE man in particular — a man of 50 and how the world looked to him and what he did about it.

"Did you ever hear of Eugene Staley? As a boy he lived on a red-clay farm and he veritably hated it—this farming I mean —and yet, he did more for the American farmer than almost any other man alive.

"Eugene Staley had seen a returned missionary from China give his father a few seeds as a curiosity — had, as a seven year old lad, planted them and saw them come up — and soybeans, for this is what they were, were added to the scanty diet of this farming family.

"But as I say, the lad hated farming, so at the age of 17, he left his folks' North Carolina farm and became a traveling salesman. He sold books, he sold flavoring extracts, baking powder and starch — until he was buying starch in bulk and packaging it himself. Then he began to make his own starch, buying corn close to his little plant in Decatur, Illinois, to save freight —and all the time trying to think of some means of improving the yield of the cornfields. At last it came back to him, those soybeans of his youth — for in addition to being feed for both man and animal — they would enrich the soil by adding nitrogen to it. Then he looked further—to find that we were importing some 15,000 tons a year of soybean oil, and cake and meal. Why not quit this business of selling odd and sundry articles and sell the farmers on the raising of this product with the Chinese name? And so he did, and the farmers listened, and the soybean acreage began to climb, slowly, but a few thousand acres a year—and it was sold for hay and for forage and for fertilizer, but the beans themselves were only used as seed.

"Now all this didn't happen as fast as I am telling it — but we suddenly find Mr. Staley now 50 years old and he's still alive and on his toes, and so he talked his associates into the idea of building a soybean mill. Then he put salesmen into the field to talk to farmers in school-houses, in court houses. He bombarded them with literature and pamphlets and put articles in the farm journals, and most important he guaranteed to buy all the soybeans the farmers would raise.

HE SET NEW RECORD

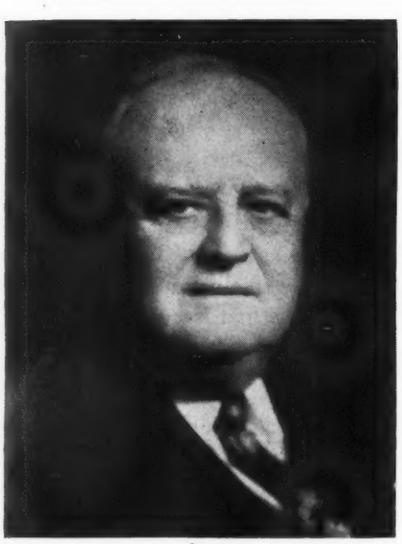
"Now that's a pretty big order—but he meant it, and it worked, for in the fall of that year, his mill crushed more soybeans into oil and meal than the state of Illinois had ever handled before.

"Then he began to have paint and lacquer manufacturers see how this oil could profitably be used by them—and his market grew. He worked with seed firms to get better seed, with machinery makers to get cheaper cultivating and harvesting implements—got the Illinois Central railroad to run a special soybean demonstration train which traveled 2,500 miles and was visited by more than 34,000 people. In three years, the soybean acreage was 10 times what it had been and still he was buying all the beans farmers could produce.

"The oil made fine margarine and salad dressings — the farmers were happy — the plant was growing — new uses came further into being. Sounds like a dream, but here it is; a dream which Mr. Staley lived to see, although he passed away in December of 1940. However, his son, A. E. Staley, Jr., is carrying on in his father's place — and last year completed construction of the nation's largest soybean oil hexane extraction plant, as well as a $250,000 laboratory to further expand research in another stride toward greater ultilization of soybeans and corn.

(Continued on page 34)

THE LATE EUGENE STALEY



CASE HISTORY No. 10

One in a series of factual experiences of a group of American manufacturers with Multiwall Paper Bags.

COST COMPARISON
(Per Ton)

	Burlap Bags	Paper Bags
Container cost	$2.18	$1.70
Labor cost	.55½	.30½
Total bag and labor cost	$2.73½	$2.00½
Saving, paper over fabric		73¢

CLASS OF PRODUCT PACKED

CEMENT	FERTILIZER ✓
CHEMICALS	FOOD
FEEDSTUFFS	MISCELLANEOUS

PRODUCT CHARACTERISTICS

ABRASIVE	GRANULAR ✓
CORROSIVE	HEAVY
DELIQUESCENT	HYGROSCOPIC
FLUFFY	LIGHT
FREE-FLOWING	VISCOUS

ST. REGIS BAG PACKAGING SYSTEMS are made in a variety of capacities, speeds, and manpower requirements to suit specific products and plant layouts. Machines are available in types to meet the special characteristics of a wide range of products, with filling speeds as high as twenty-four 100-lb. bags per minute — with one operator.

BIRDS EYE VIEW OF PACKAGING EFFICIENCY

Up to 1940, I. P. Thomas and Sons Co., of Camden, N. J., packed its mixed fertilizers in 167-lb. open mouth burlap bags.

At each of the three packing units in its Paulsboro, N. J., plant, eleven men were required to fill, check-weigh, and then sew the bags closed. The packaging output per unit averaged 18 tons an hour.

Realizing in 1941 that burlap might become scarce, the company installed three 160-FB St. Regis Packers and changed over to Multiwall paper valve bags. With this equipment as a basis, the company put into operation the highly efficient St. Regis Packaging System shown in the illustration.

HERE'S HOW IT WORKS—One man operates the St. Regis Packer, shown at left, which simultaneously weighs and fills the bags. A conveyor carries the factory-closed paper bags to a scale where they are check-weighed and then stacked on pallets. Fork lift trucks take the pallets to storage, to freight cars, or to waiting trucks. The entire operation is simple, compact, and efficient.

Here are the results—

PRODUCTION INCREASED 38%—Packaging output per unit jumped from 18 tons an hour under the old system to 25 tons an hour with the St. Regis Packaging System.

LABOR COSTS PER TON CUT 45%—Only eight men (four of whom are shown in photo) are required for each packing unit, instead of eleven under the old packaging system.

CONTAINER COSTS REDUCED 22%—Multiwall paper bags cost $1.70 for each ton packed . . . 167-lb. burlap bags cost $2.18 per ton.

CUSTOMER ACCEPTANCE—Paper bags protect against caking of contents—a problem often experienced with the use of burlap bags. And customers find 100-lb. Multiwalls easier to handle than bulky 167-lb. burlap bags.

ST. REGIS SALES CORPORATION

(Sales Subsidiary of St. Regis Paper Company)

NEW YORK 17: 230 Park Ave. **CHICAGO 1: 230 No. Michigan Ave.**
BALTIMORE 2: 2601 O'Sullivan Bldg. **SAN FRANCISCO 4: 1 Montgomery St.**

Mail this coupon for the complete story

Allentown Birmingham Boston Cleveland Dallas Denver Detroit Franklin, Va. Los Angeles Nazareth, Pa. New Orleans No. Kansas City, Mo. Ocala, Fla. Oswego, N. Y. Seattle Toledo

IN CANADA: St. Regis Paper Co. (Can.) Ltd., Montreal, Vancouver.

Without obligation, please send me full details regarding "Case History" No. 10, outlined above.

NAME_____

COMPANY_____

ADDRESS_____

—Grain Dealers National Mutual Fire Insurance Co.

FIRE HAZARDS...

TWO BASIC methods are used for extraction of oil from soybeans. One is the solvent process in which the cleaned beans are flaked and then soaked in a suitable solvent. The solvent dissolves the oil from the flakes, and is subsequently recovered by distillation. Residual solvent in the spent flakes is evaporated by heat, and the solvent vapors are recovered in a condenser.

In the solvent process of oil extraction, some degree of fire hazard is represented by the flaking rolls and by the grinder. Also improper installation and operation of the steam boiler may introduce fire hazard. These hazards, however, are present wherever such equipment is used, and are not peculiar to soybean processing.

The nature of the solvent used has the greatest bearing on fire hazard in plants of this type. In a number of plants, the solvent used is non-flammable, and a solvent extraction process using a non-flammable solvent is by far the safest method of oil extraction in-so-far as fire and explosion hazards are concerned.

In many solvent extraction plants, however, highly flammable solvents are used. Hexane is probably the most common, and this is nothing more than high test gasoline. In such plants, fire and explosion hazards may be extremely bad unless elaborate precautions are taken.

In the first place, every precaution must be taken against the escape of solvent or solvent vapors from the processing equipment, and to guard against dangerous accumulations of vapors which might be ignited by a spark or flash. Processing equipment must be sealed, and must be continuously supervised to guard against leaks of liquid or vapor. Continuous ventilation must be maintained in pits and low areas where heavy vapors might accumulate. Floors are usually in the form of open grilles to avoid vapor pockets. Continuous operation of vapor detectors is recommended. In case of repair or maintenance operations, the equipment involved should be thoroughly purged with steam before work is started.

In the second place, every forseeable source of ignition must be eliminated or properly safeguarded. Electrical equipment and wiring should be of approved explosion-proof type. All metal work should be grounded as protection against static electricity. Boiler room should be well away from processing buildings, and no open flames should be permitted in or in the vicinity of such buildings.

By C. M. PARK
Chief Engineer, Mill Mutual Fire Prevention Bureau

Smoking should be rigidly prohibited. Employees should not be permitted even to carry matches in or in the vicinity of the processing buildings. Spark-proof shoes and repair tools should be used. Any repair operations requiring cutting or welding are especially dangerous. They should be permitted only after the equipment has been shut down and has been thoroughly purged.

Even after all precautions have been taken against escape and ignition of the hazardous solvent, explosion and fire will still remain a definite possibility because of the elements of accident and of human carelessness against which adequate safeguards cannot be provided.

It is important, therefore, that steps be taken to minimize the damage that might result from explosion or fire and to provide every possible protection against injury and death of employees. Any enclosing walls should be of light construction such as sheet metal which can be blown off easily to release the force of an explosion. Floors should be open. There should be no combustible material incorporated in the building or the equipment. Solvent storage tanks, if above ground, should be located at a safe distance from other property and should be properly diked.

Most important of all, means should be provided for prompt escape from every part of each floor in the processing building.

Thought should be given to facilities for rescuing any men who might be trapped or injured.

Complete understanding by both management and employees of the very real dangers involved is without doubt the most effective protection against those dangers. Rigid safety rules should be set up and should be rigidly enforced. It should be continuously emphasized that any violation of those rules could be disastrous.

PRESSURE EXTRACTION

The second basic method of oil extraction is by pressure. Cleaned beans are cracked in a cracking roll, and then dried down to a moisture content of 1 percent or 2 percent. The hot dry stock is fed to continuous mechanical presses—which are called expellers by one manufacturer—in which the oil is forced out under tremendous mechanical pressure. The solid residue is discharged from the press in the form of large chips about one-half inch thick. This press-cake contains 4 percent to 6 percent of fat and a high percentage of protein, and it leaves the press with a moisture content of about 1 percent and at a temperature of 275° to 300° Fahrenheit. Because of the high temperature developed in the process, no subsequent toasting is necessary.

Water must be added, the material must be cooled, and it must be ground into meal. Oil from the presses contains considerable solid residue known as "foots" which is usually filtered out before the oil is shipped. The oil-soaked foots are usually fed back into the stream of stock entering the press.

This method of oil extraction does not involve the danger of explosion associated with flammable solvents, but improper design and operation may introduce very serious fire hazards. Actually, the fire loss record for plants of this type is rather bad although it has shown considerable improvement in the last few years—largely as the result of studies conducted by engineers for the Mill Mutual Insurance Companies. Origins of fires were determined, and the causes investigated. This led to the development of process modifications which have proved highly successful in eliminating the principal causes of fire.

The hazards of grinding and of steam boilers must, of course, be safeguarded by the same methods as would be used in any grain or food processing plant. Electrical equipment and wiring must be of a type designed for use in atmospheres which contain combustible dust. All of the common industrial hazards must receive attention, but these can not be called soybean processing hazards.

Rotary steam driers have a bad record as a source of fire in soybean plants. These driers use steam at a pressure of about 125 pounds which has a temperature of a little over 350° Fahrenheit. This is high enough to cause charring and eventual ignition of dust deposits which may remain in stationary contact with steam heated surfaces inside of the drier. In some of the older type driers, steam headers were cast with recesses or pockets which would fill up with dust and stock. In some cases, also, steam pipes were spaced so closely that stock would pack in between them. In these driers, fire was a frequent occurrence, and was more or less expected in the course of normal operations.

Modern rotary driers are built with smooth steam headers and with widely spaced pipes. Discharge gates are so located that the headers are continually subjected to the scouring action of the stock. These new driers are much safer than the old, but we still have occasional fires in dust accumulations on inner wall and roof surfaces.

It is important, therefore, that all spouting and ventilating ducts connected to driers be of incombustible materials. Clearance of at least 12 inches should be maintained between the driers and their vent stacks and any adjacent wood or other combustible material. As an additional precaution, a steam jet equipped with a manually operated valve should be provided to permit flooding the interior of the drier and the stack with fire-blanketing steam in case dust or stock does become ignited.

A particularly annoying characteristic of drier vent stacks is their tendency to become loaded with a saturated mass of dust. When the high temperature saturated air from the drier comes in contact with the relatively cool walls of the stack, part of the moisture condenses. This keeps the inside of the stack wet, and an accumulation of saturated dust is the natural result. These accumulations have to be cleaned out periodically. There have been several cases where spontaneous ignition has resulted in serious vent stack fires.

Our engineering department has designed several successful systems for circulating sufficient air through drier vent stacks to prevent condensation of moisture. These systems have not only eliminated the hazard of spontaneous ignition, but they have also eliminated a troublesome and messy operating condition.

Of course, all spouting, conveyors and elevator legs handling stock which has passed through the driers should be of metal. This is especially necessary where foots are fed into the stock stream. Wooden equipment will soak up oil from the foots and will burn fiercely if it becomes involved in a fire.

Improper handling of press-cake from the presses has caused more fires in soybean plants of this type than all other causes combined. As the cake leaves the press, it is excessively dry, and its temperature is well above the boiling point of water at atmospheric pressure. The material is highly porous as a result of the expulsion of oil and the removal of water. As soon as the cake starts to cool, air enters this porous structure, and normal rate of oxidation of the material is accelerated. Oxidation raises the temperature which further accelerates the rate of oxidation, and ignition temperatures are likely to be reached in a relatively short time.

Small piles of press-cake resulting from momentary break-downs of conveying or elevating equipment have been found on fire in less than one-half hour. There have been several bad fires in bins and tanks where press-cake was stored without proper tempering and cooling.

In view of the hazardous nature of the cake as it is discharged from the press, it is obvious that the only safe procedure is to cool the material and bring its moisture content up to normal with the least possible delay. It is particularly dangerous to arrange the process in such a manner that any quantity of hot untempered cake can remain stationary for even a short time. In one case, a plant was shut down unexpectedly by an accident which ruptured part of the power wiring. Within a short time the accumulated stock in an elevator boot was found to be smoking hot. The elevator leg was used to elevate hot cake from the presses to the tempering conveyor. Only prompt action in removing the hot cake from the boot saved the plant from a bad fire loss.

PRESS-CAKE IGNITION

Half-way measures are of little value in protecting against spontaneous ignition in press-cake. In one of the smaller plants, water was added at the press to bring the moisture content of the cake up to about 5 percent and the cake was elevated to a concrete stave grinder bin. Additional water was sprayed on the cake as it was fed from the bin into the hammer mill, but the hammer mill ran only about one-third of the time. Three fires in the cake bin were extinguished with a small hose stream within 60 days after the plant was put in operation. But within 6 months, a fire in the bin got out of control and the plant was totally destroyed.

In another case, the moisture content of

the cake was raised to 7 percent by the addition of water at the presses, and the cake was then elevated pneumatically to a cooling reel. Two bad fires started from spontaneous ignition in the conveyor taking stock away from the cooling reel.

All of the evidence points to the necessity for getting the tempering water on the press-cake just as quickly as possible after the cake leaves the press. Experience has shown that the moisture content must be raised to at least 10 percent if danger of spontaneous ignition is to be eliminated.

It follows that the best place for the addition of tempering water is in the cake spout or conveyor at the press. It has been shown that absorption of water into the cake is faster and more uniform when the water is applied before the temperature of the cake has dropped below the normal boiling point of water.

Early attempts to add the full amount of tempering water at the press had some undesirable results. The vapor produced when the water came in contact with the hot cake had a tendency to condense in conveyors and elevator legs. This caused rapid rusting of metal casings. Also, the dust and smaller particles of cake would become saturated before the large pieces had time to absorb their share of the tempering water. The saturated fine material had a tendency to clog elevator cups and other equipment.

To overcome these undesirable results from adding tempering water at the correct point, Mill Mutual engineers investigated the possibilities of aeration. It was found entirely practicable to circulate air through the cake handling equipment in volumes sufficient to prevent condensation of vapors and to evaporate excess water from the fine material. It was found also that the air, if given sufficient velocity, could be used effectively to elevate the stock and deliver it to storage bins or hoppers, and the combined effect of aeration and evaporation could be utilized to cool the material.

Several types of pneumatic systems have been designed by our engineers. All of them are operating satisfactorily.

In one plant, tempered press cake is picked up at the discharge end of the cake conveyor at the presses, and is conveyed about 150 feet vertically and horizontally to a cyclone collector above the grinder bin. The cake drops into the bin at a temperature of about 95° and with a moisture content of about 11 percent.

An arrangement which is simpler and which has some definite operating advantages is being used successfully in several plants. Cake from the presses drops into a metal conveyor in which the full amount of tempering water is added. The conveyor discharges into a hammer mill, and the ground meal is blown into the inlet duct of the main aerating fan. The main air supply is brought in from out of doors. The mixture of air and tempered meal is blown to an elevated cyclone collector from which the meal is packed directly in bags. The meal is cool when it leaves the cyclone. Its moisture content is at the desired level for shipping.

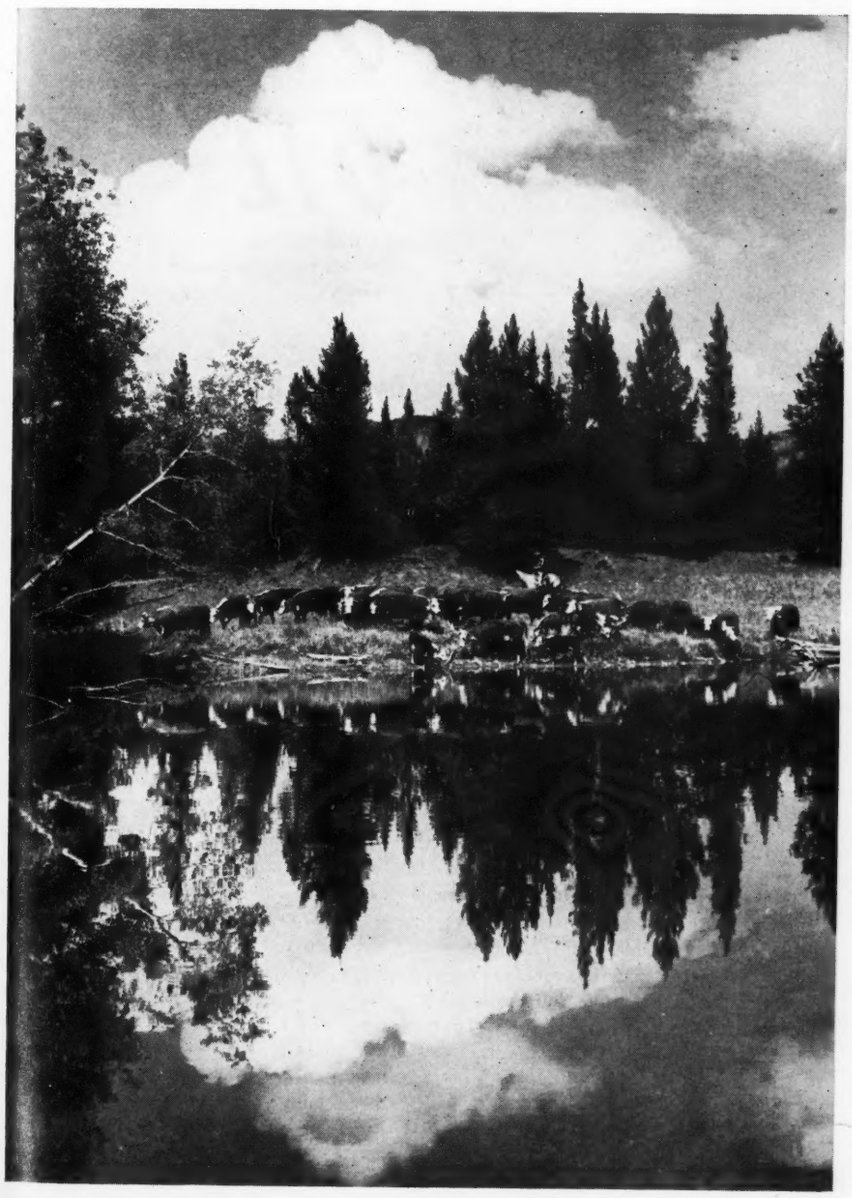
A pneumatic handling system permits the addition of tempering water at the point where the hot dry cake leaves the press. In addition, it provides a simple and effective method for cooling the stock and delivering it to any desired location. To give satisfactory results, such a system must be designed to fit the conditions in the particular plant where it is to be used. And it must be designed by engineers who are familiar with pneumatic conveying problems as well as with the moisture absorption characteristics of air.

It can be said that the pneumatic systems designed by the engineers for the Mill Mutual Insurance Companies for a considerable number of soybean processing plants have performed their intended functions satisfactorily. They have, at the same time, eliminated one of the most serious fire hazards associated with the pressure method of soybean oil extraction.

This unique photograph of a soybean plant was on a postcard mailed us by Sven A. Holmberg, seedsman of Norrkoping, Sweden.

Proteins in the COW COUNTRY

By D. O. APPLETON
Editor American Cattle Producer



THE OLD-TIME cowman didn't swing a pitchfork and he didn't drive a pick-up truck. He had saddles and horses and cattle and range—lots of range. He cut no hay in summer to feed in winter. He had no concentrates on hand for emergencies. Feed for cattle in the winter was in the form of ranges held back for better growth. For a while this cowman's business was to fatten cattle off the vast ranges of the West for shipment to the East.

Today much of this is changed. Animals are still largely dependent upon the range for their sustenance, but cow-work more often than not involves considerable haying and large purchases of concentrates, both in preparation for the "wintering" period. For, it is estimated, the feed that livestock get from the range keeps them going only 8 months of the year. For the other 4 months, supplements must be furnished.

Of course, within this broad statement there are wide variations. In Arizona, for instance the average range takes care of 10 months of an animal's yearly feed needs. In Colorado the average is only about 7 months. In some sections cattle are carried through on roughage alone; other ranges carry cattle the year round without additional feed.

But the average range cattleman today does not feed his cattle to fatten them. Finishing, while it is being done in increasing lots in the West, is still mainly the job of the Cornbelt, which is closer to consuming centers and which grows more abundant feed. The West is the country's livestock breeding ground. The cattleman uses roughages and concentrates to keep his animals from becoming emaciated. He must try to maintain the animal's weight through the winter months.

WINTER EMERGENCIES

And he has found that concentrates in cake or pellet form serve him well in winter emergencies. This feed can be got out to the cattle—often when it is impossible to move hay or other coarse feed to them. The cow often needs a boost to help her through her pregnancy—and concentrated feed gives it to her; weakened animals get concentrates to bring them up to normal.

Makers of concentrates, proteins and other livestock feeds are well aware of the need of supplemental and emergency rations in western cattle operations. It is their business to supply that need. But there is another development in cattle raising which has been attracting the feed manufacturers' attention. It is that more and more stockmen are paying strict attention to improvement in the quality of their animals. This means better utilization of the feed by the animals and entails better care and feeding.

How far this trend has gone in recent years may be shown partly by figures in livestock production at hand that give the per animal production of meat (in the cattle and calf category) in 1924 as about 240 pounds compared with 285 pounds in 1944. The tendency toward year round feeding at the feedlots, which has been marked in perhaps the past 20 years, must also be taken into consideration here. Previous practice was to put cattle in the lots in the fall and market them in late winter, spring and early summer. Now many cattle are carried on long feeds to be marketed for slaughter almost any month of the year.

Whatever may be the significance of the figures referred to, it is a fact that there has been a long-time upward trend in production per animal as a result of better feeding and breeding, even though demand and prices may from time to time have

(Continued on page 21)

Tung Blossoms .—Photos Courtesy Chemurgic Digest

"KNOW YOUR OILSEEDS" *Fifth in a series of articles concerning oilseed crops which compete with soybeans. Articles on cottonseed, peanuts, tropical oilseeds and sunflowers have appeared in previous issues.*

TUNG OIL

By S. R. GREER

Horticulturist, Mississippi State College, Poplarville, Miss.

TUNG OIL, which is expressed from the kernels of nuts borne by the tung tree, Aleurites fordii, has been used by the Chinese people for many centuries for waterproofing purposes and in the manufacture of lacquers. In recent years it has been used in America for paint and varnish making and for various other industrial purposes such as the manufacture of linoleum, oil cloth, and printing ink.

Over a period of 4 years, 1937-1940, tung oil importations into the United States averaged 114 million pounds per year, with an average price of 18.3 cents per pound. For the first seven months of 1941, importations averaged 3,500,000 pounds per month at 29.7 cents per pound. During the last 5 months of 1941 there were about 28 million pounds imported into the United States at an average price of 35.5 cents per pound. Prices had increased from 36.4 cents per pound in December, 1941, to 40.2 cents in June, 1942. In August, 1942 the price of tung oil was set by the Office of Price Administration at 39.0 cents per pound, f.o.b. New York City. It continued at about the same level through 1945.

In 1904 and 1905 the U. S. Department of Agriculture received tung seed from L. S. Wilcox, consul general at Hankow, China. This seed was planted at the U. S. Plant Introduction Gardens at Chico, Calif. In 1905-06 and in several succeeding years, seedlings grown from this and other seed were distributed by the Department of Agriculture to state agricultural experiment stations and to many private cooperators in the warmest sections of the United States.

The tung tree requires a long, warm season, yet must have a period of freezing or near freezing weather in the winter; it requires abundant rainfall and does best in an acid soil. The trial plantings quickly showed that the region to which it is best suited in the United States is a belt some 50 to 100 miles in width along the Gulf of Mexico, including northern Florida, southern Georgia, southern Alabama, southern Mississippi, southern Louisiana, and eastern Texas. The first commercial orchards were planted in northern Florida, but the industry was soon extended to other states and about 1925 it began to expand rapidly.

The first extensive planting in Mississippi was made about 1925 by Lamont Rowlands near Picayune. Other plantings followed rapidly and in a short time the acreage in Mississippi exceeded that of any other state. According to the 16th census of the United States, there were some 9,481,143 tung trees in the state of Mississippi in 1940, which was approximately three-quarters of the total number of trees in the United States.

During the 4-year period from 1940 to 1943, inclusive, the domestic production of tung oil was only 13,536,000 pounds or an average of 3.4 million pounds per year, which is only about 3 percent of our yearly imports prior to the war.

LOCATION OF THE ORCHARD

The tung orchard is best located on high, rolling land. During frosty nights in spring or during still, cold nights in winter, cold air tends to drain from the hills to adjacent low lands. Thus, orchards planted on the hills are less likely to suffer from frost injury to the blossoms or cold injury to the trees, than are orchards in a valley or on flat land. The soil should be well drained, yet with good moisture holding capacity. The tung tree is quite sensitive to a high water table. Where surface or subsoil drainage is restricted, it may survive for a time, only to be killed outright in the first exceptionally wet season. On the other hand, the trees never thrive in a sandy soil that retains only a limited water supply.

A sandy or sandy loam surface soil, underlaid with a friable sandy clay, gives best results. If the subsoil is well drained and well aerated it will be of uniform color, yellowish, brownish, or reddish, as the case may be, but without distinct mottling. Excessive mottling gives evidence that at some time during the season there is excess water standing in the soil. In all soils of the Coastal Plain, the underlying layers of so-called "parent" material are likely to be mottled, and tung trees have often been planted and have done fairly well with only 24 to 30 inches of well drained, well aerated soil of uniform color above the mottled layer; but for the best results a well developed

subsoil of uniform color should extend to a depth of at least 3 to 4 feet.

In addition to good drainage, good aeration, reasonable fertility, and the power of retaining fertilizers, the soil should have an acid reaction, preferably pH 6.0 or 6.5, although the tree will tolerate a greater soil acidity. A pH 6.5 indicates a soil verging on neutrality in reaction in which certain elements of plant food tend to become less available to the trees. If the reaction is lower than 5.5, leguminous cover crops which are a mainstay of the tung orchard, are grown with difficulty.

In terms of specific soil series, Ruston, Orangeburg, and Norfolk sandy loams or fine sandy loams are ideal for tung orchards. Although Orangeburg and Ruston are generally rated above Norfolk, instances have been observed in which tung orchards in a Norfolk fine sandy loam are fully equal in growth and production to adjacent orchards on Orangeburg soil of similar texture.

PLANTING THE ORCHARD

The recommended planting distance for tung trees is 20 feet apart in the rows, with the rows 35 feet apart, which will give 62 trees per acre. Tung trees are best transplanted in January, February, or early March. Late planting often results in poor stands and unsatisfactory growth.

FERTILIZATION OF YOUNG TREES

Soils in which tung trees will make a satisfactory growth without applications of fertilizer are exceedingly rare. As a rule it is necessary after the young tree is planted, to apply from ½ to 1 pound of a good mixed fertilizer, such as 6-8-4 or 8-8-6. This should be worked evenly into the surface soil within a radius of 18 inches around the tree, at about the time of year that growth starts. When the fertilizer is applied late, the trees seem to become stunted and there is comparatively little response. Fertilizer applied as late as May or June is probably wasted. The quantity applied should be doubled the second year, and the third year three times as much should be used as at planting time. Most of the soils in south Mississippi, where tung orchards are planted, are exceedingly deficient in phosphorus and this element seems to be especially important when the trees are young. Later, when they are larger and the roots extend through a large quantity of soil, the response to phosphorus is less apparent.

Fruit from plots that received potassium was found to contain 1.25 more percentage units of oil than that from plots to which no potassium was applied. Similar results have been observed in other experiments in mature bearing orchards. Nitrogen has been found to slightly reduce the percentage of oil in the kernels, but to increase the percentage of kernel in the whole fruit to such an extent that the oil in the whole fruit is increased by as much as 1.00 percentage unit. The effect of other elements is negligible.

HARVESTING AND STORING FRUITS

Tung fruits begin to fall in late September or early October and are all on the ground soon after the first heavy frost of the season. The fruit is allowed to remain on the ground for 4 to 6 weeks or until it has dried sufficiently for the outer covering or hull to become hard. Harvesting is done by hand. The workers are paid by the bushel at a price ranging from 5 cents to 15 cents per bushel hamper, depending on the tonnage per acre (1 ton equals about 80 bushels.)

After the fruits are gathered in baskets they may be transferred to sacks and hung in the trees for a week or two, or immediately transferred to a drying shed or storage bin. These drying sheds are nothing more than a frame building with siding and flooring spaced sufficiently to allow free circulation of air. If the fruits are to be stored at great depth, that is 15 to 20 feet, it is advisable to space the studding and floor joists at 1-foot intervals and to use ½-inch hardware cloth instead of 1-inch boards. The fruits may be put in and taken out of these bins by conveyors, or the bins may be constructed on a hillside so that the loading and unloading may be done by gravity. Growers must be cautioned against filling storage bins with green or wet fruit. Unless the fruits are rather dry, bins must be filled gradually, allowing each layer of 12 to 18 inches to dry out before adding more. The fruit is left in the storage bins for 6 weeks or 2 months or until the moisture content is reduced to approximately 12 percent or less, when the nuts are ready to deliver to the crushing mill. Drying equipment recently developed and installed may enable the mills to process fruit as gathered in the orchard.

—s b d—

COW MANURE AS SUPPLEMENT

Effectiveness of cow manure, sardine oil meal and dried skim milk as supplements to a ration containing high levels of soybean oil meal in respect to greater hatchability of eggs and increased livability of chicks is reported by Bird, Rubin, Whitson and Haynes, BAI workers at Agricultural Research Center, Beltsville, Md.

The eggs of hens fed 30 percent of soybean meal as the sole protein supplement were found low in hatchability. During a period of 43 weeks only 66 percent of the fertile eggs of those hens hatched. This compared with 84 percent hatchability of eggs from hens fed on a good breeder mash containing sardine oil meal as the only protein supplement.

The deficiency of the diet of soybean oil meal was corrected by adding 5 percent cow manure, 10 percent sardine oil meal or 10 percent dried skim milk. Mortality in the first week ranged from 16 to 38 percent in the different hatches fed 30 percent soybean oil meal, compared with 1 to 11 percent for the positive control ration.

Among the supplements used it was concluded that dried cow manure was the most effective in maintaining hatchability and viability of chicks. Both sardine oil meal and dried skim milk showed a delayed beneficial effect. Adding corn gluten feed exerted no effect in either case.

At left, 6-year old tung tree in blossom. Below, nuts on tung trees 19-months old.

Burns Out the Weeds

A postwar flame thrower designed to kill weeds in cultivated crops is being offered by New Holland Machine Co., New Holland, Pa. It is sold under the name of Sizz-Weeder. To date the machine has been used mainly on cotton, but has been successful with other crops. Soybeans were first flamed 3 years ago at Auburn, Ala. Substantial acreages of soys were flamed in Mississippi and Arkansas during the past season.

Glidden to Market Lecithin

Lecithin, one of the least known and most widely used of all soybean products, will be marketed extensively by the Glidden Co., Adrian D. Joyce, president, Cleveland, has announced.

Mr. Joyce revealed formation of a lecithin sales division under the direction of J. H. Lathe, formerly western sales manager of The Glidden Co's. chemical and pigment division.

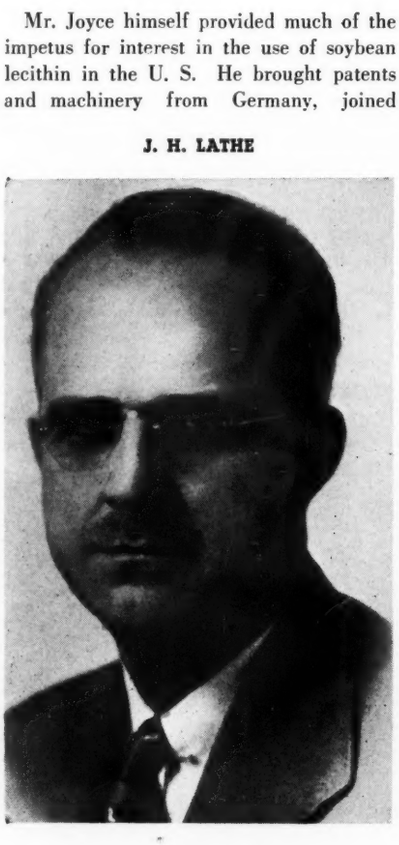
Lecithin, which is used in baking, chocolate and confectionery production and in the petroleum, cosmetic, chemical, rubber, paper, printing, butter, cheese, margarine and a whole host of other industries, is a somewhat mysterious substance. Composed of fatty acids, glycerol, phosphoric acid and choline, it is found in all living cells, especially in brain and nerve tissue and, in its most concentrated form, in egg yolks.

Although its components are no secret, nobody has been able to reassemble the ingredients and get lecithin.

Lecithin (less-i-thin), is a word derived from the Greek for yolk-of-an-egg. It has been used by man, unknowingly, since he first broke an egg into batter for baking. The Germans discovered the presence of lecithin in commercial quantities in soybeans, however, and use of the product has developed phenomenally ever since.

Mr. Joyce himself provided much of the impetus for interest in the use of soybean lecithin in the U. S. He brought patents and machinery from Germany, joined forces with other U. S. patent holders and organized the American Lecithin Co., which brought this invaluable substance into wide use by American industry.

J. H. LATHE



Experiments with lecithin have progressed in many phases of medicine and industry. It apparently benefits some who suffer from the still incurable skin disease, psoriasis; it has been reported helpful in gall bladder operations, and there is evidence that it checks tendencies toward arteriosclerosis. Other medical testing of the product is constantly being carried out.

In cosmetics it is used because of its nourishing effect on the skin; in soap because it increases cleansing efficiency and, in printing, because it tends to produce clearer shades and sharper prints.

Among the many industries which employ lecithin are: leather processing, paint and varnish, dry cleaning, glues and adhesives, textiles, insecticide and fungicide, photography, baking, creosoting of timber, toothpaste and ice cream.

The "glamorous" soybean contains more lecithin than any other source, animal or vegetable, and has enabled producers to lower the price of lecithin, formerly derived almost entirely from egg yolks, from several dollars a pound to about 35 cents a pound.

Mr. Joyce, stressing the fact that the product is not a cure-all, predicts it will have many additional applications under a continuing research program in the Glidden Co's. soya division laboratory in Chicago.

Under the direction of P. E. Sprague, vice president and director, the Glidden Co. produces lecithin at its large soybean processing plant in Chicago. The new lecithin sales head, Mr. Lathe, has had wide selling experience since he joined the Glidden Company in 1919.

—s b d—

GERMANS DEVELOP NEW FOOD FROM WOOD WASTE

A vegetable "sausage" employing soya as well as yeast from wood waste was one of the many yeast products developed by the Germans to supplement their wartime diet, according to the office of technical services, Department of Commerce. Yeast extracts also were used successfully to enrich meat and spaghetti sauces, vegetable dishes, macaroni, biscuits, soups, and gravies.

The development of food yeasts and their utilization in Germany are described by Dr. Folke Skoog, technical representative for the U. S. Army Quartermaster Corps.

Dr. Skoog's report indicates that, while waste-product yeast does not have the high food value of brewer's yeast, it contains over 50 percent high-quality protein and more than 4,500 calories per kilogram. It is extremely rich in vitamin B.

The vegetable sausage, said to resemble liverwurst in order and taste, contained 80 percent dried yeast, 10 percent soya, and 10 percent flavoring.

SOYBEAN BASE FOR FORD CO. ENAMELS

Ford Motor Co. automobile enamels made from a soybean oil base have reached the point in durability where it can be said they will outwear the steel bodies on which they are applied.

Years of patient trial and error with synthetic resin formulas resulted in this smooth, glossy, durable perfection.

When peak production is reached at the Ford Co.'s Highland Park paint plant, more than 20,000 gallons of automobile body enamel will be manufactured each day.

Four electrically heated cooking kettles operate day and night. These modern "cookers" are used to process the synthetic resins which form the base of Ford enamels.

Resins of the glyceryl phthalate type—soybean oil modified—are cooked at temperatures ranging from 425 to 450 degrees. The cooking process continues from 6 to 12 hours. When all the properties are right and the correct viscosity has been reached the "batch" is poured from the cookers into thinning tanks where it is mixed with high solvency naphthas.

The next step is through filter presses where small particles of gummed oil and impurities are removed. The resin, now thinned and filtered, next is pumped into large ball mills where concentrated color (dry pigment) is added.

It is in the ball mill that the actual color paste is made.

The mills rotate and it is the tumbling of ball bearings, inside that "grinds-out" the color. The mills turn and the balls tumble in the color paste from 24 to 100 hours depending on the pigment that is being used. Each ball mill is capable of holding 1,000 gallons of paste.

When the grinding process is completed the color paste is ready for the paint mixers. Now the color paste is pumped into turbine blade mixers (deep steel tanks with rotating blades) where additional resin is added and mixed until the right color balance and consistency is reached.

It is while the enamel is in the mixers, in the final stages, that the color matchers use their art. It is here that the new batch of enamel must be matched with the original or master color.

When this is done the sample panel is matched with the master panel and if the color matcher's eye tells him it is "right on", the mix is done.

Samuel Shook, control analyst at Ford Motor Co.'s Highland Park paint plant, takes a sample from the modern stainless cooking kettles where soybean resins are processed. One step in the production of body enamel for Ford cars.

—s b d—

MARKED DAMAGE BY BROWN STEM ROT

Did your soybeans look like they had been hit by an early frost this fall? If so, it could have been the effect of brown stem rot disease, according to Benjamin Koehler, crop pathologist, University of Illinois College of Agriculture at Urbana.

Koehler reports the disease has been causing considerable alarm among soybean growers in central and south-central Illinois. The effect of brown stem rot is more severe than frost damage. The yields are likely to be reduced more and the plants are more likely to lodge.

The disease was discovered first in the fall of 1944, became more general in 1945 and has become increasingly serious this year.

Little is known about control measures, although a good crop rotation including soybeans only once in 3 or 4 years, adequate limestone applied where needed and a good balanced soil fertility program are the best suggestions that can now be offered. The disease is caused by a soil-borne fungus and does not seem to be carried on the seed.

The pathologist describes the most pronounced outward symptoms of the disease as the blanching and turning brown of the leaf tissues between the veins. The main veins and some of the tissue close to the veins remain green longer. The interior of the stems, especially the lower half, is brown. The leaves probably die because their food supply is cut off. The same thing would apply to the pods, and thus the yield would be cut.

Koehler reports that as yet little is known about the differences in susceptibility to the disease between varieties. If differences exist, they probably are not great.

There are, however, obvious differences with respect to previous cropping. Several cases have been observed where the same variety of soybeans was planted the same day on land that had been partly in corn and partly in soybeans the previous year. The disease was considerably worse where the soybeans had been grown the second successive year. Severe cases have been observed where the previous crop had not been in beans, although that has been the exception.

Beans by Truck to Staleys

A. E. Staley Mfg. Co., Decatur, Ill., processor, has placed in operation a modern unloading platform for handling soybeans by truck. In the past the firm brought in soybeans only by rail for processing in its plants but this year the shortage of freight cars caused the firm's elevator customers to request construction of facilities for unloading from trucks also. The truck unloading facilities will be available in the future should another car shortage develop.

CHINA'S SOYBEAN PRODUCTION GAINS

Despite the fact that China's 1946 oilseed production is reported to be approaching the prewar output, the supply of processed edible vegetable oils is inadequate for domestic demand, and only limited amounts are being imported, reports *Foreign Crops and Markets.*

The deficiency is caused mainly by lack of transportation from producing centers and of processing equipment at consuming centers. It is believed that there will be little if any export of edible oilseeds from China's 1946 crops unless there is a decided improvement in transportation and general economic and political conditions.

CHINA a/: Soybean production, 1946 with comparisons

Year	Soybeans 1,000 bushels
Average 1931-37	72,602
1940	70,871
1941	63,776
1942	54,024
1943	61,241
1944	60,535
1945	62,354
1946 b/	67,313
1946 c/	84,413

Compiled from official sources.
a/ Fifteen Provinces once included under Free China.
b/ Excluding the Hsiens of Honan, Hupeh, and Chekiang, omitted in surveys since 1931.
c/ Including the Hsiens of Honan, Hupeh, and Chekiang, omitted in surveys since 1931.

The 1946 soybeans estimate for the 15 provinces is placed at 67.3 million bushels (84.4 million including the Hsiens of Honan, Hupeh, and Chekiang omitted in wartime surveys), indicating an 8 percent increase over last year's crop, but a 7 percent decrease from the 1931-37 average. The Manchurian soybean crop is much below prewar, but carry-over is believed to be quite heavy. The crop in the Nationalist controlled areas is estimated at 38.9 million bushels, compared with 40.5 million in 1945. It is likely that from the 1946 crop, plus the stocks on hand, approximately 7.3 million bushels will be available for export. Actual shipments, however, may be adversely affected by disturbed economic and political conditions.

The major part of soybean production is now outside the Nationalist controlled areas, and good yield prospects on a reduced acreage are evidenced. The amount, if any, of exportable surplus that will be available is not known.

During 1935-39, China's average annual soybean production amounted to about 200 million bushels and Manchuria's, 150 million, together representing approximately 75 percent of the world output. About 90 percent of the total world exports before the war originated in Manchuria. Annual 1935-39 shipments of beans averaged about 70 million bushels and oil, 78,000 tons. China's average annual exports (100,000 bushels of soybean and 300 tons of oil during 1935-39) have been negligible, since practically all the production is consumed within the country.

—s b d—

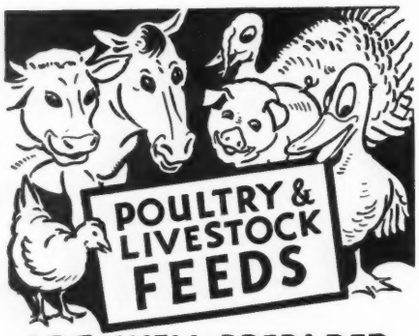
ROANOKE LEADS IN NORTH CAROLINA

The new Roanoke variety exceeds all others for yield and oil content in the Coastal Plains and Piedmont areas of North Carolina, it is reported.

The Roanoke, medium late in maturity was developed by J. A. Rigney, associate agronomist at the North Carolina Experiment Station, and E. E. Hartwig, associate agronomist of the U. S. Regional Soybean Laboratory. It was released last winter and was grown commercially to a limited extent this year.

In the tests of Rigney and Hartwig, Roanoke outyielded Woods Yellow by 8.3 bushels per acre and 4.2 percent in oil content.

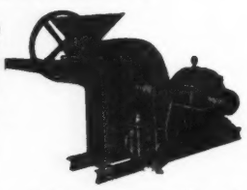
It also outyields Volstate and Ogden.



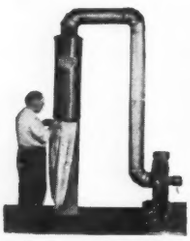
ARE WELL PREPARED WHEN YOU USE

KELLY-DUPLEX EQUIPMENT

We manufacture 6 sizes of Vertical Feed Mixers ½ to 5 tons capacity.



Model "L" Hammermill. A sturdy machine embodying many features. 40 to 60 H.P. Heavy duty Model "M" Hammermill, 50 to 100 H.P.



Kelly-Duplex Bag Cleaner. A time, money and bag saver . . . needed in every mill.

Corn Cutter and Grader. A self-contained machine that cuts, cleans, polishes and grades corn.

Hundreds of feed mills and elevators everywhere appreciate our services. Mill operators with an eye for profits call on our engineers for equipment and advice.

If you contemplate changes and improvements in your mill, plan to use Kelly-Duplex equipment. Save hours in handling and excessive labor costs. We can help you with your plans. Feel free to call on us.

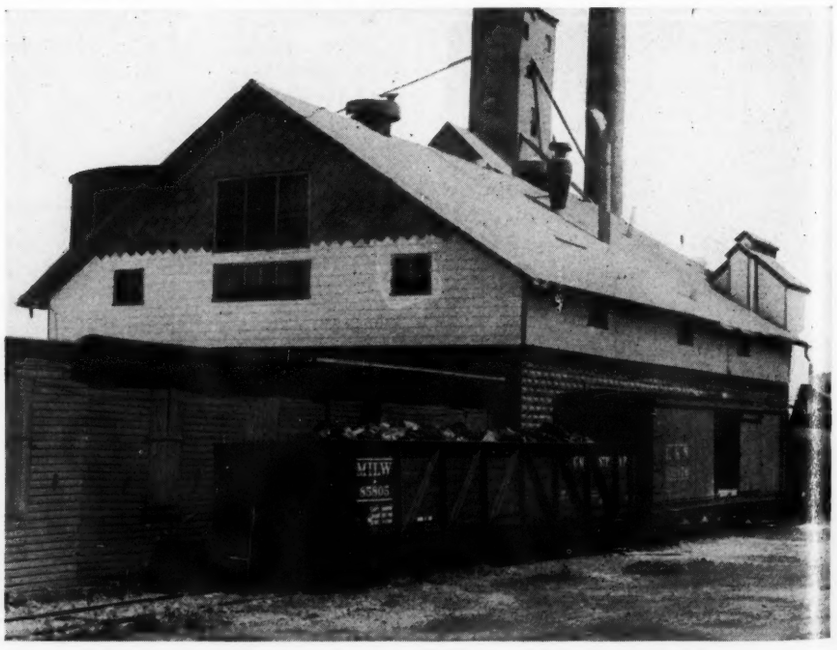
Write FOR CATALOG

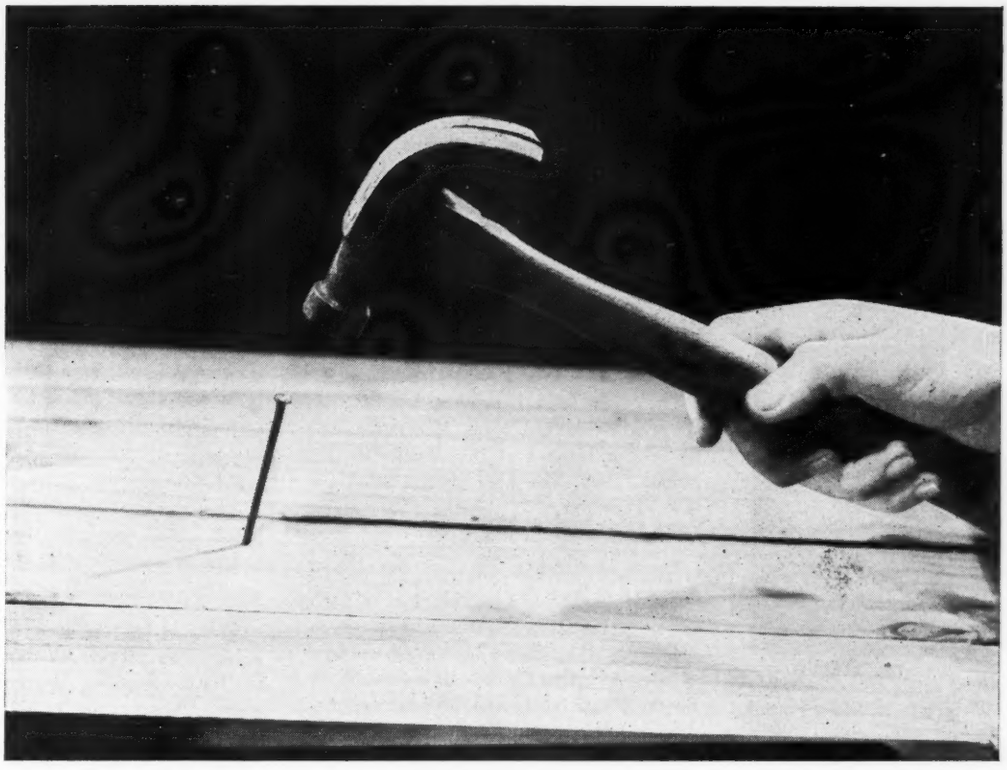
For repairs on mill or elevator equipment — count on Kelly-Duplex!

The Duplex Mill and Mfg. Co.
Springfield, Ohio

Williams Milling Co. Plant

Soybean processing plant of Williams Grain & Milling Co., Sac City, Iowa, is housed in a former light plant building. Leo Williams installed two new screw presses and a drier last summer. The firm has 400,000 bushels storage capacity, including that located in neighboring towns.





DRIVE

It takes skill to drive home a nail — without bending it or marring the finish of the wood. It takes skill also to produce and market a uniformly high quality product such as NOD-O-GEN. Trained technicians, including a renowned bacteriologist, control the production of the quality inoculator, insuring its potency for your customers. Test after test shows the presence of billions of "bugs" in each can . . . as a margin of safety for users of NOD-O-GEN. Legume plantings will be huge again next year. Be ready for the demand for the pretested inoculator — NOD-O-GEN. Order early, from your jobber or direct.

OTHER "MONEY MAKERS"

Dickinson's Farm Laboratory Division has many other crop improvement items for you . . . items much in demand among your farm trade. Included are the 2, 4-D Weed Killers, Weedicide, Weedone and Weed-No-More, about which you've heard so much the past season. One eminent agricultural authority has predicted that these products will rank with commercial fertilizers in importance on the farm schedule. For rodent control, we have TAT, formula 83 Rat Killer, the new product containing Antu, just released by the military for civilian use. The popular Hormones are in our stock, Fruitone, Rootone, Tubertone, Transplantone, and the DuPont seed treatment materials, Ceresan, Arasan, Semesan Bel and others.

We have Spergon, for preventing seed decay and damping off, and Barbak for Seed Corn. Ford Motors Ammonium Sulphate is again available, and we stock a complete range of sizes in the Sudbury Soil Test Kits. Another new item, about which you'll be hearing more is the Gat Sprayer, for lawn fertilizing. Write us for more information about any of these products.

Farm Laboratory Division

THE ALBERT DICKINSON CO. BOX 788, CHICAGO, 90, ILL.
ESTABLISHED 1859

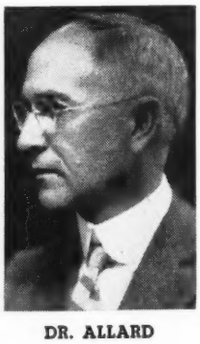
SOUTHERN OFFICE AND WAREHOUSE, 3013 N. STATE STREET, JACKSON, MISSISSIPPI

NOD-O-GEN The Pre-Tested Inoculator
The Crop and Profit "Pepper Upper"

ALLARD RETIRES FROM USDA POST

Harry A. Allard, co-discoverer of photoperiodism—a fundamental law governing the blossoming and fruiting of plants retired October 1 after 40 years in scientific work for the U. S. Department of Agriculture.

With formal training in botany, geology, and plant physiology he carried on research in a relatively narrow field for the benefit of growers of a number of farm crops, notably soybeans, cotton and tobacco. But he is probably best known in scientific circles and among readers of nature publications for his avocation—nature in general.



DR. ALLARD

It was this fortunate combination of expertness in plant physiology and broad knowledge of nature that made Allard's contribution all-important in the joint discovery about 25 years ago by himself and Dr. W. W. Garner of the fundamental law that the blossoming and fruiting of plants depends upon the length of day (or night)—what is known as photoperiodism. Dr. Garner was then head of tobacco investigations in the Bureau of Plant Industry. It was work on soybeans and tobacco that led to the discovery of photoperiodism. The account of the discovery was published in the *Journal of Agricultural Research* in 1920. Knowledge of this law has stimulated increasing research in the field of photoperiodism which is today yielding useful facts.

—sbd—

WESTERN GRAIN ASS'N MEETS IN NOVEMBER

The 47th annual convention of the Western Grain and Feed Association will be held at Hotel Fort Des Moines in Des Moines, Iowa, November 25 and 26, Mark G. Thornburg, executive secretary, announces.

Some outstanding speakers for the 2 day session have been secured. They include:

Dr. O. B. Jesness, head agricultural economist, University of Minnesota; R. C. Booth, Piper Grain and Milling Co., Cedar Rapids; R. C. Woodworth, chairman National Grain Trade Council.

Allan B. Kline, president Iowa Farm Bureau Federation; Col. Robert S. Henry, assistant to the president of the Association of American Railroads; Ray Bowden, executive vice president of the Grain and Feed Dealers National; Walter C. Berger, president American Feed Manufacturers Association; and Roswell (Bob) Garst, Garst-Thomas Hybrid Corn Co., Coon Rapids, Iowa.

—sbd—

USES OF SESAME

The word "sesame" has had various meanings in legend and literature but in modern food and trade sense it means a tiny seed yielding chiefly a useful vegetable oil, according to USDA's Office of Foreign Affairs. To a lesser extent sesame is used in candy and in a refreshing drink called *horchata*.

The oil is valuable for cooking and in salad making, as a component in the manufacture of margarine, shortenings and soaps, in the pharmaceutical and perfume industries, and as an illuminant. The leaves make an excellent livestock feed.

China is by far the leading grower but sesame has become an important oil crop in Latin America during the last 10 years. Approximately 100,000 short tons were grown there in 1945. The production outlook for sesame south of the border is not expected to show any marked change during the immediate postwar years. The extent to which competitive fats and oils will replace it will depend largely upon the internal demand and prices.

GLIDDEN

DIAMOND G BRAND

HIGH QUALITY PRODUCTS FOR MEAT PROCESSORS

- **EFFICIENT SOYA BINDERS**

  "SOYABITS": Practically Fat-Free, Over 50% Protein, Bland in Flavor, Light Color
  "SOYALOSE": Rich in Protein, Low Fat Content, Mild Flavor, Nearly Starch-Free

- **CERTIFIED FOOD COLORS**

  A complete line of pure, soluble, uniform, concentrated food colors . . . certified by the U. S. Department of Agriculture.

Note: Federal Regulations approve the use of Soya Flour in the production of Sausage and Chili Con Carne.

THE GLIDDEN COMPANY
SOYA PRODUCTS DIVISION
National Headquarters — Cleveland, Ohio
5165 West Moffat Street Chicago 39, Illinois

LARGE ATTENDANCE AT CHEMISTS' MEETING

A record registration of 568 marked the 20th annual fall meeting of the American Oil Chemists Society at the Edgewater Beach Hotel, Chicago October 30-November 1.

H. C. Black, Swift & Co., was general chairman. Speakers presented a total of 40 papers. Chemists from Holland, Brazil, India and Canada lent an international flavor to the meetings.

Two papers by G. R. Van Atta of the Western Regional Research Laboratory, Albany, Calif., concerned research leading to the production of drying oils from edible oils. Success in this field would mean that the total supply of fats and oils would be highly interchangeable since inedible oils are already made edible by hydrogenation.

E. T. Roe, of the Eastern Regional Research Laboratory, Philadelphia, described an attempt to modify the properties of vegetable fats to give them wider commercial use.

As described by Mr. Roe, the object of the research might be to impart castor oil properties to cottonseed and soybean oils, for use in resins, plastics, paints and varnish.

A number of papers were devoted to the keeping qualities of fats and oils in shortenings at the closing session.

O. S. Privett, Macdonald College, McGill University, presented a paper on the heat polymerization and solvent segregation of vegetable oils.

—s b d—

SOYBEAN AWARDS AT INTERNATIONAL SHOW

Over 40 awards are being made for prize winning soybeans at the International Grain and Hay Show at Union Stock Yards, Chicago November 30-December 7.

Awards are made for peck quantity entries from the eight grain growing regions of the United States.

Two trophies are also awarded for champion soybeans this year. The Union Stock Yard and Transit Co. of Chicago trophy becomes the permanent property of the winner after being won three times. The Philip W. Pillsbury trophy is the permanent property of the winner.

—s b d—

APPLETON

(Continued from page 13)

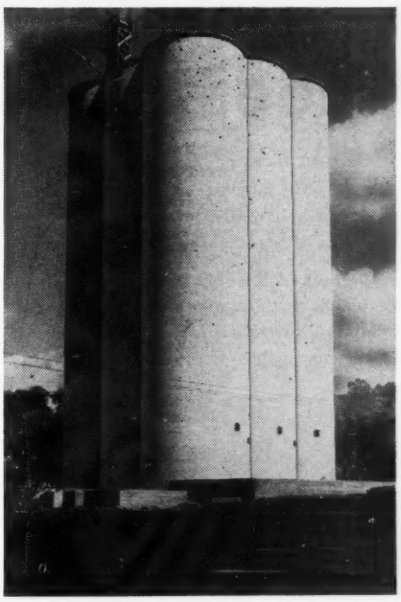
interfered with the advance.

For the past several years there has been a scramble for livestock feed of all kinds. One wonders if it will not continue, though less frenzied, in the years to come. Our human population is growing. In 1970, it is estimated, we will have 29 percent more people than we had in 1940. Where will these newborns get meat? This country for the past generation, except for the war periods, has just about produced enough meat for its needs.

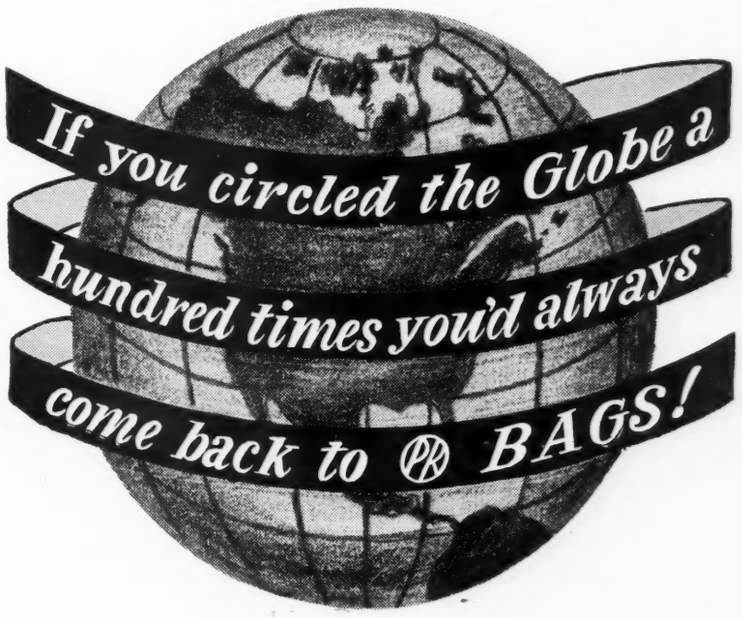
The answer evidently is to grow more livestock. In the cattle industry that is what is happening right now. We are on the downside of a peak population cycle in cattle, but if the advice of those who forecast our future requirements is heeded, we will stop on our descent in numbers considerably above the level that was the low point in the previous cycle. Men who 10 years ago said this country should have a cattle population of 65 million head have in recent years revised that figure to 75 million or even slightly higher. Last January the country had almost 80 million cattle and calves on its farms and ranches.

Tomorrow's rancher, according to some who have speculated on the problem, may have to get the feed he will need for increased numbers of livestock from the shifting of feed used for exports to domestic use; from the switching of land in surplus wheat to livestock feed; from large scale irrigation developments to reclaim millions of acres of new land such as are talked about in the Bureau of Reclamation to grow the feed for the meat that apparently is going to be demanded in the war-grown population centers of the Pacific coast. This would involve government spending. In any case, feed processed and otherwise is a crying need in the livestock business.

BORDEN ELEVATOR



The recently completed 300,000 bushel soybean storage elevator of the Borden Co., at Fort Dodge, Iowa. The structure cost $150,000. Francis J. Hanson, formerly with Plymouth Processing Co., and General Mills, Inc. is Manager.



Because – PK Bags are world-beaters for Durability — Attractive new material — Originality of design — Newest printing process — Perfected wash-out inks.

Always Something New!

PERCY KENT BAG CO., INC.

KANSAS CITY • BUFFALO • NEW YORK • WICHITA • MINNEAPOLIS
CHICAGO • OKLAHOMA CITY

Turbulent Market Greets 1946 Crop

Early yield forecasts of the 1946 soybean crop were apparently borne out in the field, according to *Soybean Digest* correspondents.

The bulk of the crop in the chief soybean producing sections was harvested and marketed by November 1. Quality was good except for reports of a high percentage of splits.

The sudden removal of ceilings October 17 threw the market into the greatest turmoil it has seen since the fall of 1942. At that time an early freeze placed millions of bushels of green soybeans on the market.

An earlier reported disposition of growers to hold soybeans on farms was reversed by the ceiling removal. Higher prices pulled many beans that had been intended for seed out of storage. This will probably mean a shortage of seed at planting time.

Much of the crop was already out of growers' hands when the ceilings came off, which did not please anybody.

Attitude has not jelled toward USDA'S announced goal of 11.35 million soybean acres for 1947, more than have yet been planted. Later price relationships with such crops as corn, small grains and cotton will be the determining factor.

Reports of *Soybean Digest* correspondents follow, for November 1 unless otherwise noted.

ARKANSAS

Jacob Hartz, Stuttgart, for east and east central: (Oct. 28). 50% harvested. Yields slightly better than earlier estimates. Beans grading No. 2, some with high moisture. 10-15% of crop marketed before removal of ceiling. Plenty of storage but boxcars short. Above normal percentage being stored on farm. Farmers will plant soybeans in 1947 if USDA puts on $2.04 floor.

L. M. Humphrey, K. L. Dortch Seed Farms, Scott, Ark., for Little Rock and nearby territory: 80% harvested. Yield about 80% of 1945. 60% marketed before removal of ceilings. Some reduction in yield from leaf spot and insect damage. Storage and boxcar situation satisfactory. Very little being stored on farm. Attitude toward 1947 planting will depend to some extent on future trend of cotton prices.

ILLINOIS

Russell S. Davis, Clayton, for west central: 90% harvested. 80% marketed prior to removal of ceilings. Yields lower than earlier indications but considerably above 1945. Brown stem rot lowered yield in a few fields. Beans grading mostly No. 2. Mills and elevator storage full. Only a few cars coming through. Quite a few beans were stored on farms until ceiling went off. But higher price offered since has attracted most of these to market. General trend in soybean acreage here downward. But wet corn planting season would change this. Most feeders expecting meal to be priced so high they cannot afford to feed it. Last year beans at $2.15 produced meal at $52.50. This year $2.30 beans make meal $90. But this is not the only thing that don't make sense.

J. E. Johnson, Champaign for Champaign and adjoining counties: 99½% harvested. Yields will run slightly lower than earlier estimates. Wide variation with many extremely low, very few high. Damage from too much moisture and heavy loss from disease, brown stem rot and bud blight. Unfortunately very little study made of condition leaving us at loss to know where was greatest loss and its real cause. Beans grading excellent. Box car situation very serious. All available storage used and elevators resorted to truck to move crop and did fine job. Working 24 hours a day they kept combines going. Not over 10% stored on farm. Protein concentrate price prohibitive. 98% of

FREE COMMODITY MARKETS

Call for

CONSTANT ATTENTION

NOW that most controls and restrictions have been lifted from the majority of commodities, free competitive markets have been re-established.

During the period in which the commodity exchanges were closed we maintained a continuing check on the various factors influencing market conditions. The present situation requires equally careful attention in order to keep abreast of price trends, inventories and future developments *as they occur.*

In this connection, our offices located in 91 cities—many of them in areas where commodities are either largely grown or processed—provide us with the facilities for obtaining market data *at the source.* Our staff of specialists in every commodity interprets this information for you, and it is transmitted quickly, efficiently, by means of our 40,000 miles of leased wires.

We will be glad to consult with you regarding the manner in which our wide experience, backed by our nationwide facilities, can be used for your benefit.

MERRILL LYNCH, PIERCE, FENNER & BEANE

Brokers in Commodities and Securities

Underwriters and Distributors of Investment Securities

70 PINE STREET NEW YORK 5, N. Y.

Offices in 91 Cities

crop marketed before removal of ceilings. Growers are utterly disgusted. Acreage in this territory has slowly declined in past few years. Yield also has showed slow decline. Situation leads one to believe we have much to learn about soybean production. As yet no spectacular variety for yield. As many growers will not plant Lincolns another year as other varieties. Highest consistent yielder is Richland grown to its adaptation to soil and other factors.

Walter McLaughlin, McLaughlin Agricultural Service, Inc., Decatur, for Decatur and vicinity: Crop 100% harvested. Yields same as earlier estimates. Quite serious disease damage in some localities. Beans premium quality. 90% crop marketed prior to removal of ceilings. Very small percent stored on farm. Some protein concentrates available but priced too high.

H. I. Cohn, Valley Farms, Carrollton: 85% crop harvested. Yields varied widely but average higher than 1945 and higher than estimates for better fields. Damage from heavy rains in mid-August. Beans grading No. 2 or better. Rowed beans unusually large, uniform and clean. 60% of crop marketed prior to removal of ceilings. No box cars. Beans trucked to market. Not over 5% stored on farm. Protein concentrates available at $80 to $100 per ton. Excellent results from Lincolns planted in rows will encourage growers in 1947. Large surplus of corn looks like more beans to me. High cost of shucking and cribbing corn as compared with combining beans another factor in favor of beans for 1947.

Frank S. Garwood and Sons, Stonington, for south central: 95% harvested. Yields lower than earlier estimates but higher than 1945. Principle damage from brown stem rot, particularly in those fields with soybeans as previous crop. Beans grading No. 1. 85-90% marketed prior to removal of ceiling. Harvesting not held up for lack of storage. Many processors were able to take soybeans by truck, preventing market tieup. Less than normal being stored on farm. High prices might bring some of these out of storage. Protein concentrates priced so high not many feeders will buy much. Trend toward more rowed beans each succeeding year. With diseases on increase, will be less and less soybean acreage following soybeans. Lincoln has met general farmer acceptance.

INDIANA

K. E. Beeson, secretary-treasurer, Indiana Corn Growers Association, Lafayette: Practically all crop harvested. Beans very dry. Probably over 50% marketed prior to removal of ceilings. No serious complaints about storage and boxcar situation. Less being stored on farm than usual. Protein concentrates available to limited extent.

Peter J. Lux, state PMA committee: 95% harvested. Due to drought some disease has shown up this year. Beans grading good except for size and cracked beans. 60% of crop marketed prior to removal of ceiling. Movement from farms reported heavy during recent price advance. Average farmer having difficulty obtaining meal. We may have problem in obtaining quality seed for 1947.

J. B. Edmondson, Clayton, for south central: (Oct. 28). Crop all harvested. Yield probably 5% above 1945. Beans freest from damage of all kinds for many years. Grading No. 2, low moisture but rather high percentage of splits. 75% marketed prior to removal of ceiling. Boxcar service fairly good. Some delay during peak but not serious. 20% or less of crop stored on farm. Protein concentrate needs fairly well supplied. From supply and demand standpoint beans in strong position as compared to corn if present price trends hold. A decided renewed interest in 1947 acreage of soys. Present boom price pulling many lots of intended seed beans out of country.

IOWA

Howard L. Roach, Plainfield, for northeast: (Oct. 28). 95% of crop harvested. Yields average 23 bu. or little better than earlier forecast. Drought cut yield about 4 bu. Beans all grading No. 2. Moisture 12.7%. 15% marketed prior to removal of ceiling. Storage and boxcar situation okay. 10% being stored on farm. Protein concentrates just becoming available. Attitude toward 1947 acreage good.

Fred Hawthorne, Castana, for western: (Oct. 29). 60% harvested. Yield 25 to 40 bu. per acre, 10 bu. better than last year. Beans grading good, moisture 11 to 13%. 10% of crop marketed prior to removal of ceiling. 25% stored on farm. Protein concentrates available in limited quantities. Higher prices will increase 1947 acreage.

KANSAS

L. A. Clevinger, extension division Kansas State College, Manhattan, for eastern: (Oct. 28). 90% of crop harvested. Good conditions during maturity have increased estimated state yields from 8 to 9 bu. per acre. Considerable damage from drought and loss from shattering. Low estimated yield for state due to drought in south one-half of soybean section. Drought did not affect northeast Kansas. Beans grading No. 2 or better. 50% marketed before removal of ceiling. Most beans going direct to local markets by truck. 25% being stored on farm, less than previous estimate. More concentrates available but still scarce.

MINNESOTA

N. C. Bieter, Farmer Seed and Nursery Co., Fairibault, for central and southern: Estimate 40-50% of crop harvested. Too wet for combining past week. Beans grading No. 1 and 2 so far. Crop still in fields needs good drying weather for at least 10 days. Practically no beans sold prior to removal of ceiling. Less than 10% being stored. Farmers sell from field. 1947 acreage will be larger if price holds within shooting distance of $3.00 per bu.

Rock Island Railroad: The outstanding development in Minnesota agriculture in 1946 was the 32 percent increase in the soybean crop, which is now firmly established as one of the major crops of southern Minnesota.

W. G. Green, Lakefield, for southwest: 70% harvested. 5% hail damage. Beans grading mostly No. 2. Boxcars short. 1%

being stored on farm. Farmers all very well pleased with soybean crop. Looks like a fair sized acreage for next season.

John W. Evans, Montevideo, for southwest central: 80% harvested. Yields one-third more than earlier estimates. Beans grading excellent. 11-14% moisture. 5% of crop marketed prior to removal of ceiling. Storage and boxcar situation fair to good. 10-15% being stored on farm. General attitude toward 1947 acreage very satisfactory.

MISSISSIPPI

Lacy S. Stoner, Holly Bluff, for Yazoo County: (Oct. 29). 95% of crop harvested. Yields about 5-10% above 1945. 15-20% decrease in yield due to drought. 50% marketed prior to removal of ceiling. Storage and boxcar situation adequate. 5-10% of crop being stored on farm for seed beans. More beans will be planted in 1947.

MISSOURI

J. Ross Fleetwood, extension specialist, University of Missouri: (Oct. 28). 90% harvested. Yields higher than earlier estimates. Much higher than 1945. 60% marketed before removal of ceiling. Very small percentage being stored on farm. 1947 acreage likely to be as great as this year.

E. M. Poirot, Golden City, for southwest: (Oct 26). 100% harvested. Yields about 10 bu. per acre. Drouth damage. Beans grading very good. About 12% moisture. 65-70% of crop marketed prior to removal of ceiling. Increase in 1947 acreage if price stays up.

Harry A. Plattner, Malta Bend, for central (Oct. 29). 95% harvested. Yields 10% above 1945. Beans grading No. 2 or better. 25% of crop marketed prior to removal of ceilings. 10% being stored on farm. No protein concentrates available.

NEBRASKA

Fremont Cake and Meal Co., Fremont, for east: (Oct. 28). 80% of crop harvested. Yields average about 10 bu. per acre higher than 1945—30 to 45 bu. with 35 bu. common. Grading No. 2 or better, 12 to 13.5% moisture. A larger 1947 acreage if beans hold around $3.00 level.

NORTH DAKOTA

Harry D. Lohse, agricultural agent Greater North Dakota Association, Fargo: 90% harvested. Yield about 12 bu. average for state. Nearly all beans on farm yet. Some moving out of state by truck. It would appear from talking to farmers that 1947 acreage will be larger.

OHIO

Ersel Walley, Walley Agricultural Service, Fort Wayne, Ind., for northeast Indiana and northwest Ohio: 95% crop harvested. Yields equal to August 1946 estimates and 1945 crop. Some drought damage. Few low spots hurt by frost. Beans grading No. 2. 80% marketed prior to removal of ceiling. Beans found storage and transportation surprisingly well. 20% including seed needs being stored on farm. With corn going down in price and beans up present indication is for larger 1947 acreage. Growers sore because they sold before rise.

D. G. Wing, Mechanicsburg, for west central: 90% harvested. Some yields below early estimates in drought areas but about same as 1945. Just north of here September drought was severe. Frost caught some late beans causing 10-15% damage. About one-half crop sold prior to removal of ceiling. 80-90% of crop has moved from farm. Soybean oil meal is scarce and high. If soybean price stays up will be a larger crop planted in 1947.

G. G. McIlroy, Irwin, for west central: (Oct. 30). 65% harvested. Yields probably 15% under 1945. Beans grading mostly No. 1. 20% marketed prior to removal of ceiling. 10% being stored on farm. Protein concentrates available in limited amounts. Not likely that we will have any great number of days favorable for harvesting. We may leave some beans in the fields.

D. F. Beard, extension agronomist, Ohio State University, Columbus: 75-80% crop harvested. Yields variable but average lower in most of bean growing area where Aug.-Sept. drought and cold August weather took heavier toll than expected. Beans mostly very dry and in good condition. Some "early bean" localities well harvested before ceiling came off. Late beans paid off this year, even with poorer yields. Removal of ceilings has not created over enthusiasm for 1947 soybean acreage yet.

W. G. Weigle, Marsh Foundation Farms, Van Wert, for northwest: Yields 20-25% below 1945. Frost caught some of very late planted beans but they yielded more than expected earlier. All early combined beans brought premium prices. Quality also good except a high percentage of splits, 15-20% in many cases. About 75% of crop marketed prior to removal of ceilings.

We feel that relative prices for corn and oats will have more effect on 1947 soybean acreage than anything else. Many farmers sold all beans from combine because they were badly split and will have to buy seed.

SOUTH DAKOTA

H. G. Miller and Son, Garden City, for Clark County: (Oct. 29). 20% harvested. Yields average 12-15 bu. per acre. 12% damage from July drought. Beans grading No. 2. 25% of crop being stored on farm. 20% increase expected in 1947.

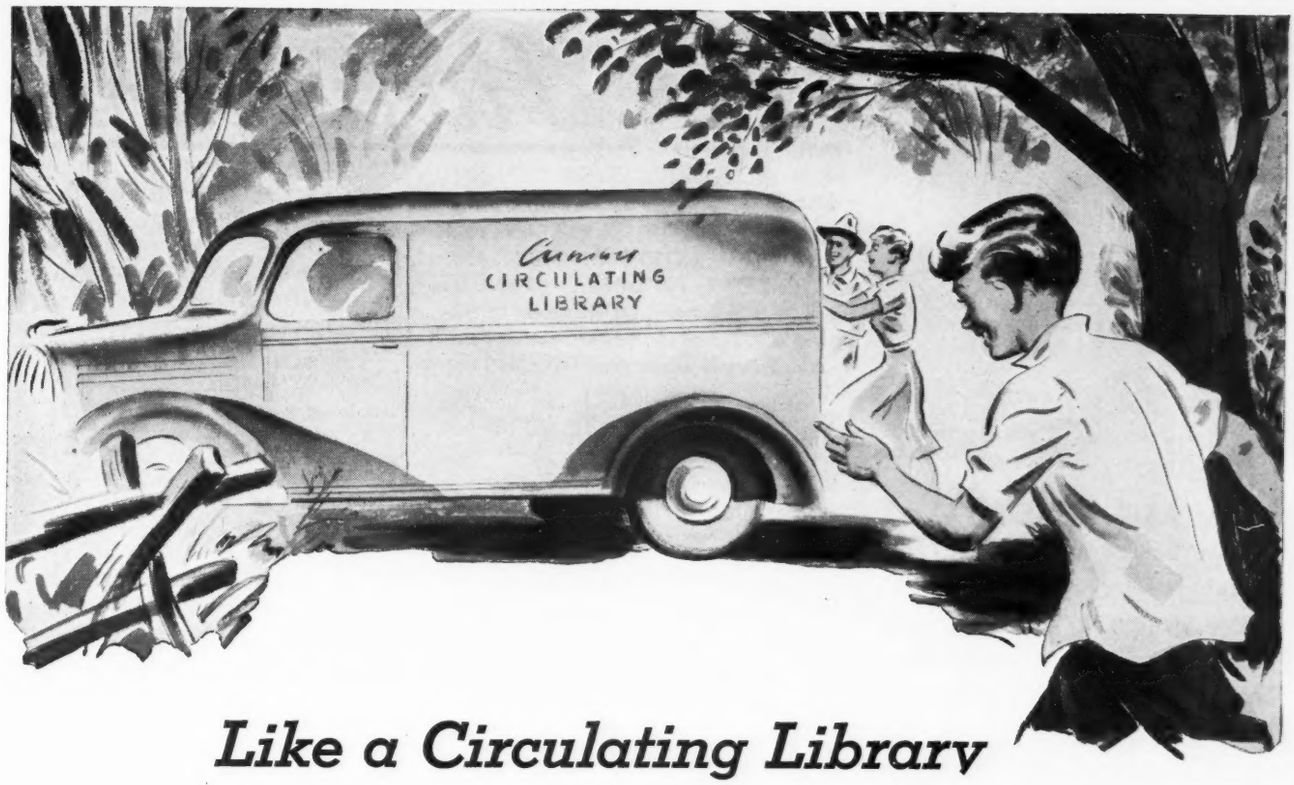
VIRGINIA

B. W. Sadler, supervisor grain section, Division of Markets, Richmond: (Oct. 29). 15-20% of crop harvested. Yields about same as earlier estimates. Slightly less than 1945. Beans grading No. 2 on all factors except moisture which varies from 12-16%. Less than 1% marketed prior to removal of ceilings. Storage inadequate. Most beans delivered to mill or dealer by truck and processed immediately. 10% or less of crop being held on farm.

WISCONSIN

Geo. M. Briggs, Agronomy Building, Madison: (Oct. 29). 40-50% harvested. Drought damage in northwest and late plantings. Lincoln reduced some in southern area. Advance in prices may influence more acreage in 1947. Many farmers with small amounts of soybeans planning to use for dairy feed unless protein concentrate available.

John P. Dries, Saukville, for eastern lake shore region: Crop 100% harvested. Yields normal. 15% drought damage. Beans grading No. 2 or better. Storage and boxcar situation good. No beans being stored on farm. Attitude toward 1947 acreage will adjust itself if prices remain high.

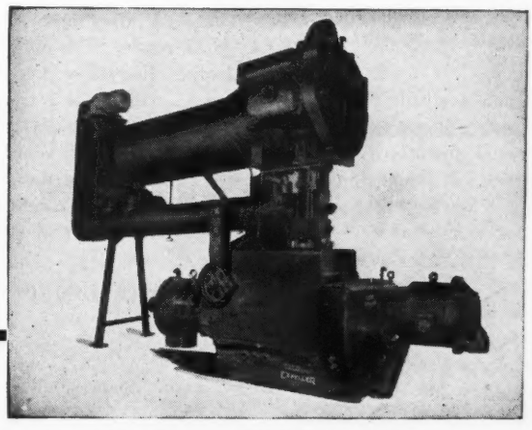


Like a Circulating Library

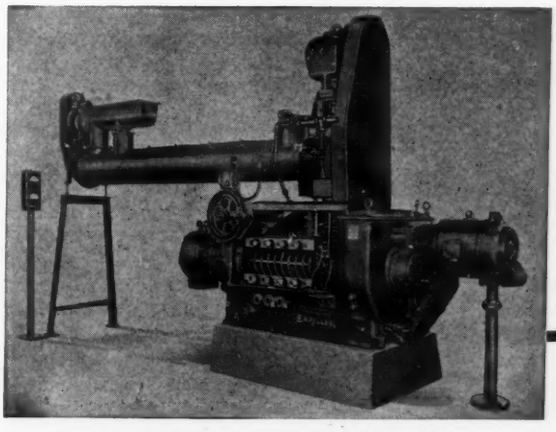
Circulating libraries were originated to make good books available to people who did not have easy access to libraries. We like to think of our staff of Expeller* Engineers as circulating libraries for oil mill executives. These men, travelling all parts of the United States, bring to your office information on all phases of oil milling. They are equipped to help you determine the best process for your plant. They understand plant layout and production. And particularly, they can advise on all kinds of equipment. Anderson Engineers are bringing this volume of knowledge to anyone who requests it. Do you? Then write today, a meeting will be arranged at your convenience.

THE V. D. ANDERSON COMPANY
1935 WEST 96TH STREET • CLEVELAND 2, OHIO

*Exclusive Trade Mark Registered in U. S. Patent Office and in foreign countries.

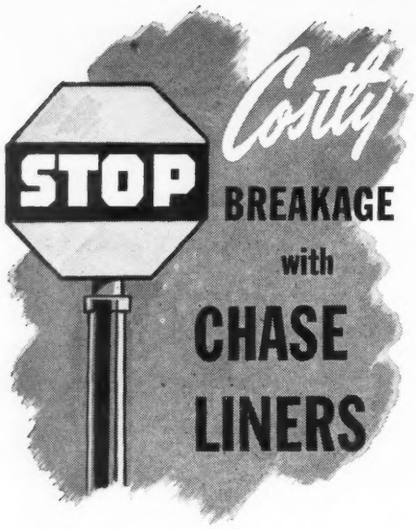


DUPLEX SUPER DUO OIL EXPELLER

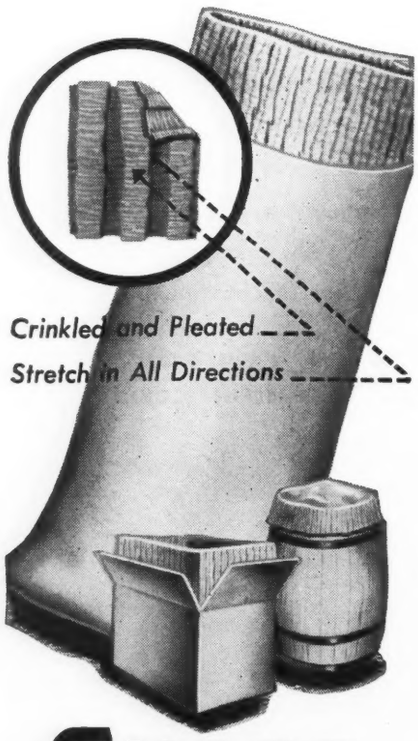


DUO EXPELLER WITH CONDITIONER

Only ANDERSON MAKES EXPELLERS



Chase Liners are crinkled and pleated. They're flexible, elastic — stretch in all directions. Provide greater protection, stop costly liner breakage. Check on Chase Liners today — it's the better product that costs no more than ordinary liners.



CHASE BAG CO.

GENERAL SALES OFFICES
309 WEST JACKSON BLVD., CHICAGO 6, ILL.

BOISE • DALLAS • TOLEDO • DENVER • DETROIT • MINNEAPOLIS
ST. LOUIS • NEW YORK • CLEVELAND • MILWAUKEE • PITTSBURGH
BUFFALO • KANSAS CITY • MEMPHIS • GOSHEN, IND. • PHILADELPHIA
NEW ORLEANS • ORLANDO, FLA. • SALT LAKE CITY • OKLAHOMA
CITY • PORTLAND, ORE. • REIDSVILLE, N. C. • HARLINGEN, TEXAS
CHAGRIN FALLS, O. • HUTCHINSON, KAN. • CROSSETT, ARK.

Publications

Food

PROCESSING OF SOY BEAN FOR THE PREPARATION OF MILK AND OTHER FOOD PRODUCTS. By S. S. De and V. Subrahmanyan, Department of Biochemistry, Indian Institute of Science, Bangalore, India, in *Indian Farming*. 1946.

Stockpiling of soybeans by the Germans just prior to World War II, and the fact that Chinese and Japanese people both derive a considerable amount of their protein requirements from soys, has aroused considerable interest in India.

Several Indian leaders attempted to popularize the use of soybeans as food and a quantity of the imported product appeared on Indian markets between 10 and 15 years ago. But the results of eating the whole beans were not too satisfactory. There were some complaints of indigestion and the biological value of the protein was considered not too high.

The authors describe the production of soy milk and its uses, and mention some other products.

They suggest the creation of a National Organization for Soya Research similar to that already existing in the Soviet Union. Soybeans can be grown readily over a large part of India, in their belief.

ADVANCEMENTS IN DEVELOPMENT AND USE OF SOY ALBUMEN. By J. R. Turner, food products division, Central Soya Co., Inc., in *Manufacturing Confectioner*, June 1946.

Soy albumen, although a product of wartime scarcities, is rapidly growing up to find a permanent niche as an essential ingredient in the manufacture of certain types of candy.

The improved product, now available in commercial quantities, is a highly refined food protein with exceptional characteristics and functional properties. It is not a substitute or extender but a worthy competitor to egg albumen for certain applications in the manufacture of candy. Practically all the confectioners' objections to the first soy albumen have been overcome.

Great strides have been made the past year in perfecting soy albumen. Acceptance by the confectionary industry has been most gratifying.

Further research and experience with the use of soy albumen will bring about improvements in the product, and a greater appreciation of its functional characteristics.

THE POSSIBILITIES OF USING SPECIES OF PERENNIAL CUCURBITS AS SOURCES OF VEGETABLE FATS AND PROTEIN. L. C. Curtis, University of Connecticut, Storrs. *Chemurgic Digest*, July 15, 1946.

A comparison is made between the composition of soybeans, peanuts and three species of cucurbits.

No experimentation on these gourds has yet been made in the U. S. The yield could be increased if the plants were cultivated or grown under more favorable conditions. At present, plants are growing wild in areas extending from Missouri to California and south into Mexico.

They could be cultivated at very little expense and their seed harvested mechanically on land which is now agriculturally unproductive.

Diseases

DISEASES OF SOYBEANS — THEIR CONTROL. By A. A. Hildebrand, Dominion Laboratory of Plant Pathology, Harrow, Ontario. *Canadian Horticulture and Home Magazine*, May 1946.

Thirteen soybean diseases have been reported in Canada. These include mosaic and bud blight, bacterial blight and a number of fungus diseases.

During the past 3 years at the Harrow plant disease laboratory seed lots of soybeans have been treated with the seed protectant dusts, Spergon, Arasan and Fermate. The author says the use of Spergon is compatible with inoculation. In practice, the seed is treated first with Spergon, then inoculated according to the manufacturer's directions.

Dr. Hildebrand also reports some interesting yield results from different rates of seed planting. In 1943 seed of the A. K. Harrow was planted at the rate of 20, 30, 40 and 50 pounds per acre in an effort to determine if there was any connection between rate of planting and the amount of disease present. Weather conditions were so favorable that year that there was little disease present.

But the following yield results were noted:

Planting Rate	Stand of Plants	Yield
20 lb. per acre	878	26.5 lb.
30 lb. per acre	1304	28.5 lb.
40 lb. per acre	1717	26.5 lb.
50 lb. per acre	2145	25.5 lb.
	6044	105.0 lb.

It will be noted that the highest yield was obtained from the 30 pound per acre planting rate. Twenty pounds per acre

gave a return as high at the 40 pound and higher than the 50 pound rate.

A check of other experiments indicated there was no relationship between number of plants in the row and row yield. This led to the conclusion that the soybean plant shows remarkable capability in adapting itself to widely varying degrees of competition.

The author suggests that for each type of soil there is probably a planting rate that will give the highest yield. On the lighter types of soil maximum yield should be obtained from not over 30 pounds per acre. On the heavier soils 45 pounds should be sufficient.

Editor's Note: For further discussion of rate of planting see article, "Large Scale Soybean Production," by H. I. Cohn, in September 1946 SOYBEAN DIGEST.

Standards

REPORT OF THE SOYBEAN ANALYSIS COMMITTEE. 1945-46. American Oil Chemists' Society. *Oil and Soap*, September 1946.

During the past year no collaborative work on soybeans has been carried out by the committee. Since the official AOCS soybean analysis methods developed by the committee are now used satisfactorily in marketing the entire soybean crop, the committee has completed its purpose and recommends that any further modifications and study of the method may well be undertaken by the recently organized seed and meal analysis committee as one of its functions.

R. T. Doughtie, Jr., agent of the Commodity Credit Corporation, has conducted an extensive test of the present official AOCS procedure for determining the oil content of soybeans. Results, participated in by 38 of the leading soybean chemists of the country, have been made available through the courtesy of Mr. Doughtie.

Studies on the grinding of soybeans with a hammermill type of mill have been carried out at the Northern Regional Research Laboratory. This mill shows sufficient promise so that it will be submitted to a number of other laboratories for test under their operating conditions.

Seed Treatment

RESULTS OF THE UNIFORM SEED TREATMENT TESTS IN 1944. By W. B. Allington, G. C. Kent, I. W. Tervet and Benjamin Koehler. *Plant Disease Reporter.*

These seed treatment tests were conducted under the auspices of the subcommittee on soybeans of the general seed treatment committee of the American Phytopathological Society.

The tests were expanded to include 18 locations in 1944, as compared with 9 in 1943, including several Southern and Eastern states.

Though some increases in stand from treatment with chemicals were obtained at a number of locations, the difference was not great enough to result in increased yield.

In view of the results obtained in 1943 and 1944 it appears doubtful that seed treatment for soybeans can be recommended. Further tests are needed. It is known that injury to the seeds or seedlings from the seed treatment chemicals used does not seem to occur, and that serious effects on nodulation in soils which have previously grown soybeans may not be expected.

Feeds

EFFECTIVENESS OF DIETARY SUPPLEMENTS IN INCREASING HATCHABILITY OF EGGS AND VIABILITY OF PROGENY OF HENS FED A DIET CONTAINING A HIGH LEVEL OF SOYBEAN OIL MEAL. By H. R. Bird, Max Rubin, Donald Whitson, and S. K. Haynes, Bureau of Animal Industry, Beltsville, Md.

In confirmation of an earlier report it was found that the eggs of hens fed 30 percent of soybean oil meal as the sole protein supplement were low in hatchability.

During a period of 43 weeks only 66 percent of the fertile eggs of these hens hatched, compared with 84 percent hatchability of the fertile eggs of hens fed a good breeder mash containing sardine meal as the only protein supplement.

The deficiency of the diet containing 30 percent soybean oil meal was revealed not only by low hatchability but by low viability of chicks hatched. Mortality during the first week of life ranged from 16 to 38 percent as compared with 1 to 11 percent for the offspring of the birds fed the diet containing sardine meal.

Modifications of the hens' diet improved the viability of the chicks as well as hatchability of the eggs.

Market Street

We invite the readers of THE SOYBEAN DIGEST to use "MARKET STREET" for their classified advertising. If you have processing machinery, laboratory equipment, soybean seed, or other items of interest to the industry, advertise them here.

Rate: 5c per word per issue.
Minimum insertion $1.00.

REPRESENTATIVE soybean oil mills. Will positively give you best representation for soy oil and meal in South and Southwest Texas, also South Louisiana; exclusive representations solicited also. A. E. Burgess, 401-03 United Gas Bldg., Houston, Texas.

FOR SALE—75 new vertical steel tanks; 4,200 gallon, 10,000 gallon, 21,000 gallon and 41,000 gallon capacity in stock. Low prices. L. M. Stanhope, Rosemont, Penn.

NEW STEEL TANKS
STOCK SHIPMENT

80—	4,200	Gal. Cap.	9'2"x 8'	Vertical
30—	10,100	Gal. Cap.	15'4"x 8'	Vertical
60—	21,000	Gal. Cap.	21'6"x 8'	Vertical
15—	21,000	Gal. Cap.	15' x16'	Vertical
100—	42,000	Gal. Cap.	21'6"x16'	Vertical
30—	42,000	Gal. Cap.	29'8"x 8'	Vertical
10—	126,000	Gal. Cap.	29'8"x24'	Vertical
6—	221,000	Gal. Cap.	38'7"x24'	Vertical
10—	420,000	Gal. Cap.	54' x24'	Vertical

L. M. STANHOPE
ROSEMONT, PENNA.

ROESLING, MONROE & CO.

CARL H. SMITH — GEO. K. DAHLIN — LARRY K. DROOM

327 South La Salle Street — Phone Harrison 2382 — Chicago 4, Illinois

BROKERS

CRUDE & REFINED VEGETABLE OILS

BIDS and OFFERS SOLICITED

Wire, Phone or Write

GRITS and FLAKES...

FROM THE WORLD OF SOY

Dr. Travis W. Brasfield has been appointed sales manager for agricultural chemicals, U. S. Rubber Co., Naugatuck, Conn. Dr. Brasfield was assigned to intelligence and counter intelligence work in the Army Air Forces as a lieutenant colonel during the war.

* * * *

Marvin E. Narramore, in charge of oil meal sales for Spencer Kellogg and Sons, Inc., at Des Moines, Iowa, before he entered service, has been named Wisconsin representative of Atkins and Durbrow Corp., Chicago.

* * * *

A new booklet, *Laucks Glues*, published by I. F. Laucks, Inc. discusses resin, casein and soybean glues. It is obtainable from the Laucks firm at Bewley Bldg., Lockport, N. Y., and 911 Western Ave., Maritime Bldg., Seattle 4, Wash.

* * * *

R. L. Morrison, with the army's Air Service Command during the war, is now associated with Soya Corporation of America, Baltimore, Md.

* * * *

Buckeye Cotton Oil Co., Memphis, Tenn., reports receipt of 2,000 tons of soybeans in one day, largest in the history of the firm. Most beans are coming from Arkansas and southeast Missouri where many cotton planters have shifted to soys.

* * * *

Dr. C. S. Crawford has been appointed assistant manager of the chemical products department of Phillips Petroleum Co., Bartlesville, Okla. Dr. A. J. Dirksen was promoted to manager of the product development division, position formerly held by Crawford.

* * * *

First issue of the highly attractive organ issued by General Mills research laboratories, *Progress Through Research*, is off the press. The magazine will be published quarterly to cover new products, methods, research activities and articles on scientific subjects.

* * * *

C. E. White, formerly manager of Wilson and Co. soybean mills in Arkansas, has been named manager of the Planters Oil Mill at Tunica, Miss.

* * * *

Heartsill Banks, formerly of Ralston Purina Co., Kansas City, Mo., has arrived in Seoul, Korea to take charge of rice breeding work for the U. S. War Department there. He reports Seoul a city of "1 million Koreans, 10 million smells and not even one street light."

* * * *

Oilseed crops from western Canada will be processed at Fort William by Edible Oils, Ltd. Firm is headed by K. A. Powell, president of Halley and Carey, Ltd., Winnipeg. It will process about 30,000 tons of oilseeds yearly.

* * * *

A new experimental farm to be operated by the Department of Agricultural Engineering of the College of Agriculture of Ohio State University, is a result of plans released by the Sinclair Refining Co. and the college.

* * * *

ASA Director Howard L. Roach, Plainfield, Iowa, was pictured with Editor-in-Chief Wheeler McMillen in September FARM JOURNAL.

* * * *

R. P. Hutchins, of the development department of Procter and Gamble Co., has joined the staff of the French Oil Machinery Co., Piqua, Ohio, as technical director of the solvent extraction division.

* * * *

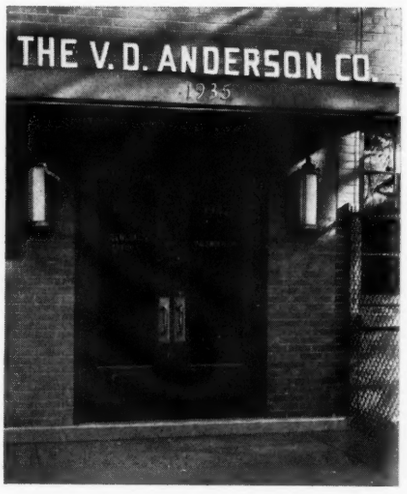
A mixture of sulfathiazole with skimmed milk and soy flour as a pollen substitute for bees helps prevent the spread of American foulbrood disease, says A. E. Staley Mfg. Co.

* * * *

A new vitamin E factor, delta tocopherol, expected to find wide use as a preservative, has been isolated from soybean oil, and is also present in wheat germ, cottonseed and peanut oils. This was one of the developments reported at the Chicago meeting of the American Chemical Society.

* * * *

Nebraska farmers will find a scarcity of certified soybean and other seed for 1947 plantings, University of Nebraska agronomists warn.



General offices of the V. D. Anderson Co. at 1935 W. 96th St., Cleveland, Ohio.

BOOKLET DESCRIBES V. D. ANDERSON CO.

A man with an inventive mind began his career making and selling hoops for hoop skirts.

He ended it after he had developed a continuous press for pressing oils out of oleaginous seeds and nuts that today presses more than 79 oilseeds and is in use in practically every civilized country.

Valerius D. Anderson, founder of V. D. Anderson Co., made the hoops at Milton, Wis., 1855. Later he established a factory to make fertilizer driers in Cleveland, Ohio, the present location of the firm.

The V. D. Anderson Company—the Organization and Its Products, is an attractive 32-page booklet recently issued covering the present and past of this firm.

Sections are devoted to the two principal products, expellers and steam traps, and to the executive personnel of the company.

"It was published with the purpose of giving customers and prospects, in the field which we serve, a clear picture of this company, its executive personnel and its products," states B. J. Veltman, sales manager.

The first oil expellers were used in packing houses for pressing out grease from packing house waste. It was not until 1906 that the first commercially successful oil expeller was used on an oilseed—flaxseed. The same year starch plants began to use expellers for pressing corn germs. It was in later years that the expansion of soybean growing opened up a vast new market for Anderson products.

The reader may obtain a copy of this booklet by writing direct to the V. D. Anderson Co., 1935 W. 96th St., Cleveland 2, Ohio.

WE are equipped to grind and corrugate mill rolls up to 19 inches in diameter by 60 inches long.

We are also equipped to grind rolls 36 inches in diameter by 200 inches long, overall. Mirror finish for fine grinding, velvet finish for capacity.

Your patronage solicited.

Prices on request.

Mc. Grinding & Corrugating Works

E. G. McCLINTIC, Owner

2827-29-31 Terrace St., Kansas City 8, Mo.

WILBUR-ELLIS COMPANY

BROKERS OF SOYBEAN OIL AND PROTEINS

Complete Domestic and Foreign Coverage

105 West Adams St., Chicago, Ill.

Telephone: CENTRAL 0494

New York **San Francisco** **Los Angeles** **Seattle**

ARCHER QUALITY

SOYBEAN PROCESSORS

ARCHER·DANIELS·MIDLAND CO.

CREATING NEW VALUES FROM AMERICA'S HARVESTS

Bemis Bro. Bag Co. announces the appointment of T. A. Buck as sales manager of the firm's Kansas City organization. Mr. Buck has been with Bemis for over 11 years, most of that time in Kansas and Texas.

* * * *

W. J. O'Brien, vice president and director of the Glidden Co., has been named chairman of a committee of Glidden executives in charge of manufacturing, research and development. Members include Vice Presidents R. W. Levenhagen, Paul E. Sprague and Dwight P. Joyce.

* * * *

New additions to the board of directors of Allied Mills, Inc., include: J. A. Bolton, R. E. Clizbe, A. G. Phillips, J. R. Cardwell and A. E. Chapman.

* * * *

Boone Valley Cooperative Processing Association, Eagle Grove, Iowa, processed 475,993 bushels of soybeans during the 1945-46 season, officials announce.

* * * *

The Iowa *Assessors' Annual Farm Census—1945* includes a production table of soybeans by counties in the state. Acres, yield per acre and production by bushels for 1945 are included. Big production and acreages lie in the northern and central parts.

* * * *

Archer-Daniels-Midland Co., Minneapolis, has announced the following promotions: T. L. Daniels, executive vice-president; J. W. Moore, A. C. Hoehne, F. E. Benson and R. W. Capps to be vice-presidents and heads of various departments.

* * * *

Soybeans were among items exempted from the October embargo of Association of American Railroads on all freight consigned to port areas of the U. S. for foreign shipment by water.

* * * *

Lycoming Foods Corp. is the new name of Tom Soya Foods, Inc., at Williamsport, Penn. This is not a new corporation but the continuation of the former corporation under a new name, says A. Merle Hooper, president.

* * * *

George P. Torrence, executive vice president of Link-Belt Co. since July 1, became president of the company the first of November, succeeding William C. Carter, who continues as a director of the company. Torrence has been with Link-Belt since 1911.

CHANGES MADE BY PILLSBURY MILLS

Clyde H. Hendrix, Clinton, Iowa, president, feed and soy division, Pillsbury Mills, has announced the appointment of Vincent J. Kearney as branch manager at Centerville, Iowa, and the transfer of Matt Amey Jr., former Centerville manager, to managership of the company's new feed mill at Lima, Ohio, now nearing completion.

VINCENT KEARNEY

Kearney, Pillsbury employee since 1943, was formerly a member of the feed and soy division purchasing department at its Clinton headquarters. Amey, prior to receiving the Centerville assignment he now turns over to Kearney, was also a former member of the Clinton purchasing department.

In his new position, Kearney will be in charge of Pillsbury's feed and soy division operations at Centerville. Kearney served 2 years with the army, including duty in the South Pacific.

from RAW COTTON to FINISHED BAGS..

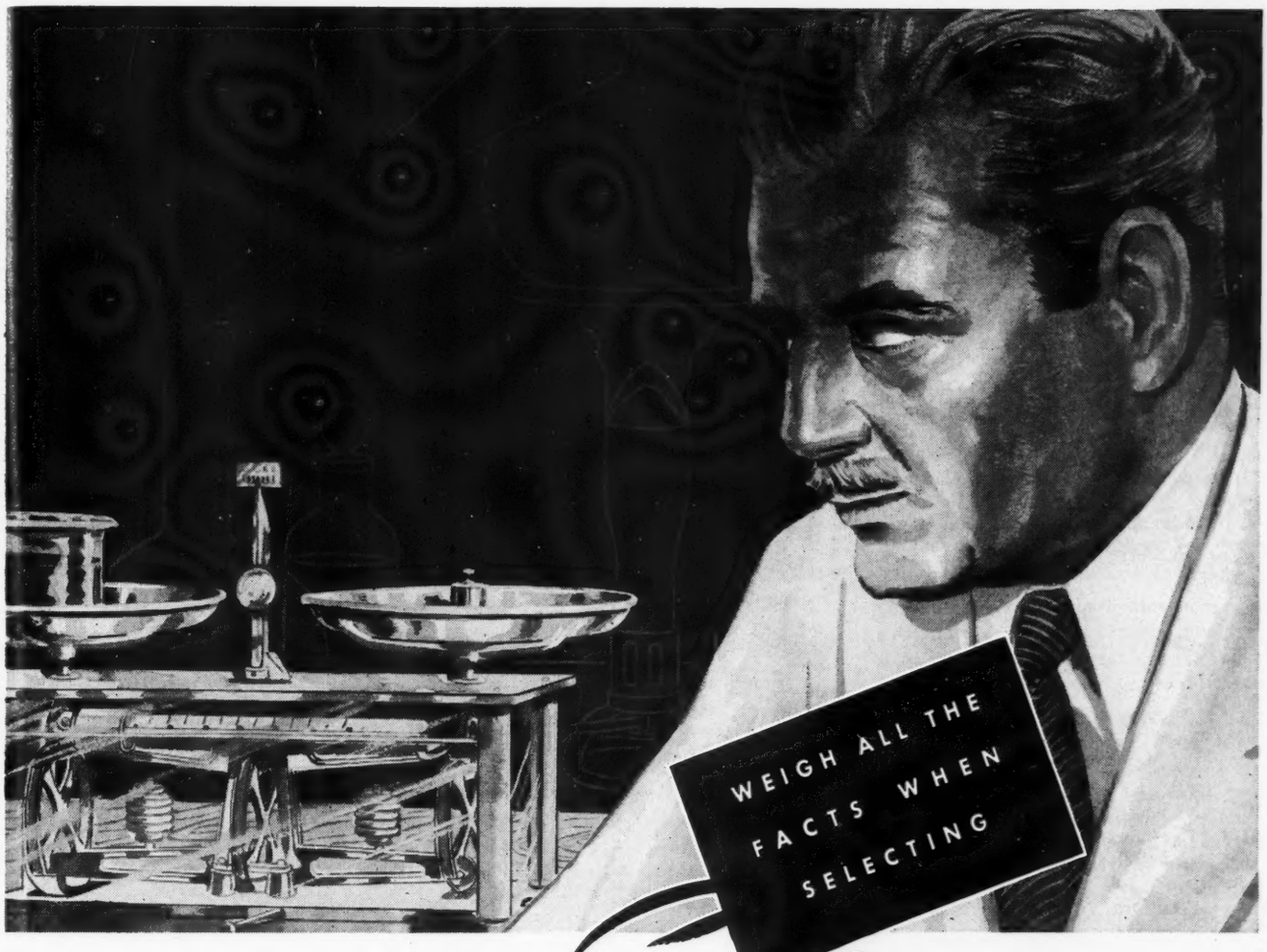
FULTON BAGS made in our plants from the raw cotton to the finished bag assures you a safe and economical container for shipping soybean meal.

Quality — Appearance — Strength — these factors are all "in the bag" when you use FULTON BAGS for your meal, pellets and feeds. FULTON artcraft printing of your brand is a valuable sales aid. Remember, too, that your soybean meal will not heat when stored in cotton bags. For the best in cotton bags, always specify FULTON.

FULTON BAG & COTTON MILLS

Manufacturers Since 1870

Atlanta St. Louis Dallas Minneapolis Denver New Orleans Kansas City, Kan. New York



Solvents

FOR SOYBEAN OIL EXTRACTION

One of the most important decisions to be made by the soybean oil extractor is in his choice of solvents, because this choice helps determine operating costs, product quality and profits.

With a narrow boiling range of 6° or less — with 150 to 156 F. — Phillips Normal Hexane does not contain troublesome non-condensable light components or non-recoverable heavy residues. Vapor loss and solvent contamination of your finished product are minimized. Low initial cost, consistent uniformity and pleasant odor also aid in producing a premium grade soybean oil at a minimum of expense. Write today for prices and other information.

PHILLIPS PETROLEUM COMPANY

Chemical Products Department

BARTLESVILLE, OKLAHOMA

WASHINGTON Digest

By PORTER M. HEDGE

Washington Correspondent for The Soybean Digest

Controls Are Off! For the first time since start of the war the soybean industry is virtually free of governmental controls as far as the raw product is concerned.

Price controls have now been removed not only on soybeans and oil meal, but on all soybean by-products, including margarine, shortening, cooking and salad oils, except plastics.

MPR 406 which controls prices of materials going into plastics still remains in effect.

All of the War Food orders affecting soybeans have been revoked (as of Oct. 19) except WFO 63. This prohibits oil imports except as authorized by Department of Agriculture, and the authority to control soybean exports through Commerce Department licensing.

USDA will thus continue to allocate soybean exports, but has decided to discontinue control of high lauric acid oils.

With the almost over-night decontrol of all edible and inedible fats and oils, USDA said it was impractical to attempt to enforce the War Food orders. Orders revoked as of Oct. 19:

WFO 29, controlling distribution, delivery and use of soybean, cottonseed, peanut and corn oils.

WFO 42 restricting use of fats and oils in edible fat or oil products.

WFO 42a, covering use of fats and oils in protective coatings, coated fabrics, and floor coverings.

WFO 42b, governing use of fats and oils in soap.

WFO 43, restricting use, processing, sale and delivery of coconut, babassu, palm kernel and other high lauric acid oils.

WFO 67 covering inedible tallow or grease.

WFO 124, governing linseed oil inventories.

Many in top government circles think that the Office of Price Administration, as an agency, will be folded up in a matter of weeks. A plan has been drafted to turn controls over rents and building materials over to the National Housing Administration, and sugar over to Department of Agriculture—and to discard all the rest.

Fats & Oils Outlook Building up of fats and oils inventories to restore working stocks is expected to have some inflationary effect on prices in the next few months.

This is the current estimate of the Bureau of Agricultural Economics, but it goes on to say:

"If inventory building becomes excessive, prices of fats and oils undoubtedly will decline fairly sharply when overall demand weakens, possibly in the spring or summer of 1947."

"In the event of a general business decline," says BAE, "prices of fats and oils will recede, perhaps sharply, from the peaks likely to be reached in the next few months.

"The severity of this recession in prices will depend largely on the extent of the previous rise. Over the next 2 or 3 years, however, the average level of prices of fats, oils, and oilseeds is likely to remain high in relation to prewar.

"World export supplies of fats and oils available for shipment to North America and Europe will not return to prewar levels before 1948 at the earliest. Actually, it may be several years before the world volume of exports returns to prewar, since some areas formerly exporting in large volume, such as India, have shown a tendency in recent years to retain a large part of their production to satisfy increased domestic demand in those areas."

Needs for Fats, Oils Edible fats and oils requirements for the 1947-48 year are estimated in the new USDA goals recommendations at a total of 5,750 million pounds.

Here is the current USDA breakdown of requirements (in millions of pounds) for this period: For domestic consumption, refined, 4,890; exports and shipments (to military, etc.), 400; non-food uses, foots and loss, 360; increase in working stocks, 100. Total, 5,750 million pounds.

Here is the USDA breakdown of prospective edible oil supplies (in millions of pounds): Imports, 300 (prewar average was 513 million pounds); lard, 2,200; edible tallow and oils except soybean, 1,750; soybean oil, 1,500. Total, 5,750 million pounds.

Requirements for the period are figured on the basis of a U. S. population, including the military, of 143.8 million persons, a U. S. national income of about $160 billion, and demand for edible fats and oils at Oct. 1, 1946 prices, of at least 50 pounds per capita (or 34 pounds per capita excluding butter). This would mean a total domestic demand, excluding butter, of at least 4,890 million pounds.

1947 Goals for Soybeans Department of Agriculture is now proposing a 1947 soybean goal of 11,350,000 acres, about 500,-

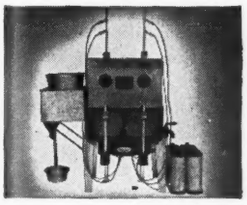
a MOISTURE TESTER *for Every Need*

Ask Seedburo to solve your moisture testing problem. For 33 years this organization has studied moisture questions... has accumulated a vast fund of "know how" . . . is known as the "center of information" about moisture analysis. It will study your requirements and make suggestions. Its recommendations are unbiased because it offers a wide selection of testers ... one for every need.

Steinlite ONE MINUTE TESTER

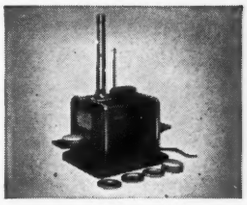
An experienced operator can make a moisture test with the Steinlite in one minute; almost any operator in two or three minutes. For production work as well as laboratory. ACCURATE—calibrated against official oven methods. EASY TO USE—operator requires no technical training. Works on radio frequency impedance principle. More in use than all other electrical moisture testers combined. Tests wide variety of products—whole grain, mixed feeds, meal, cottonseed, nuts, etc. New applications being found regularly. Sold on 10-day free trial basis. No money down.

BROWN-DUVEL, . . . *old well known - reliable*



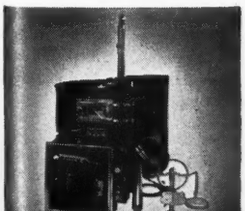
One of the oldest and best known testers. Especially suited where the volume of samples is small. Available to test 1, 2, 4 or 6 samples at once. Illustration shows two compartment tester with automatic electric shut-off. Extra accessories available. For whole grain only.

CARTER-SIMON- *For Laboratory Tests on all materials*



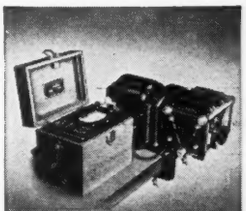
A small, rapid drying oven which reduces laboratory testing period to a minimum. Precision built, absolutely accurate and reliable. Handles 3 samples at once. Total time for tests varies with product; for example malt, six minutes; wheat, fifteen minutes; sugar beet, thirty minutes.

BRABENDER- *Semi-Automatic..the Modern Drying Oven*



An ideal combination of a modern drying oven and an analytical balance. Combines speed with the precision of analytical methods. Results are read from a scale in direct moisture percentages. No cumbersome calculations. Used in both laboratory and production. Drying time varies from 15 to 40 minutes depending upon commodity.

TAG-HEPPENSTALL . . . *Rapid . . . Reliable*



An electrical meter for whole grain only. Calibrated against the water oven for corn; against the air oven for other grains. Requires no weighing of samples. No. 91, complete, with both rolls and battery eliminator. Available with only one roll at slightly lower cost.

THE "CENTER" FOR EQUIPMENT AND SUPPLIES

Over 400 items of seed, grain and mill equipment and supplies available promptly from Seedburo . . . blowers, bag trucks, scales, respirators, germinators, etc. Made of finest materials, rigidly inspected, guaranteed.

SEND FOR CATALOG AND REFERENCE BOOK

If you have not received your Seedburo catalog write today. It contains official directions for grading grain, written in plain language. 116 large size pages.

SEEDBURO
EQUIPMENT COMPANY

629 BROOKS BUILDING • CHICAGO 6, ILLINOIS

000 acres greater than the biggest harvest on record.

A month ago, the Department had proposed a soybean goal of 10,300,000 acres. The increase is being made because of higher oilseed prices which now make them more competitive with other crops.

The desired U. S. soybean production next year is now put at 212,210,000 bushels. This assumes an average yield of 18.7 bushels per acre. The proposed breakdown of use is 45 million bushels for seed, feed, full-fat flour, other food uses, and loss, leaving an estimated 167 million bushels (1,500 million pounds in terms of oil) for crushing and export.

The following table shows latest goal recommendations by states:

1947 GOAL

State	Production (1,000 bu.)	Acres (1,000)	% acreage goal is of 1946
N. Y.	87	6	100
N. J.	146	10	111
Penn.	480	30	150
Ill.	80,625	3,750	119
Ind.	26,825	1,450	112
Ia.	40,000	2,000	128
Mich.	1,875	125	118
Minn.	8,850	570	101
Mo.	10,500	700	115
Neb.	280	20	143
Ohio	26,000	1,300	138
S. Dak.	390	30	125
Wis.	775	50	179
Del.	468	36	100
Md.	416	32	103
Va.	1,260	90	105
W. Va.	25	2	100
N. C.	2,750	250	125
Ky.	910	70	115
Tenn.	1,120	80	100
Ala.	180	30	150
Ark.	4,030	310	148
Ga.	65	10	100
La.	438	35	135
Miss.	1,020	85	131
Okla.	70	10	91
S. C.	70	10	100
Tex.	16	2	
Kan.	2,695	245	117
N. Dak.	144	12	133
U. S.	212,210	11,350	121

For the Cornbelt states the new goals represent a 21 percent increase over this year's acreage for harvest. The new U. S. goal is 275 percent of prewar (1937-41) average.

—s b d—

STALEY

(Continued from page 8)

"Government figures indicate that the United States production of soybeans is expected to total more than 190 millions of bushels this year—a figure higher than that of even Manchuria. Illinois has now become the soybean center of our country, to last year produce alone, over 70 million bushels—a product of prime importance to industry.

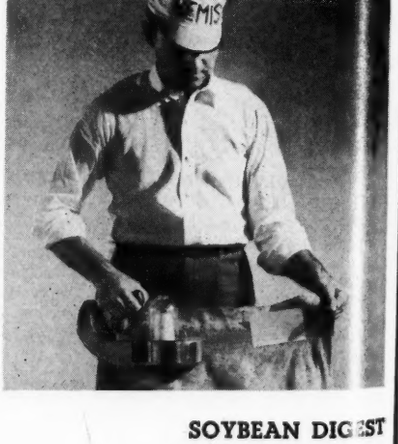
"This boy who hated farming, at the age of 50 probably did as much for the American farmer as any other living person.

"We can't or probably don't all desire to become farmers, or the tillers of soybeans, but we have told this story to bear out this fact, that at 50 we are positively NOT through, nor are we devoid of ideas which might give us a start for this older security which we at that age all so hopefully seek."

—s b d—

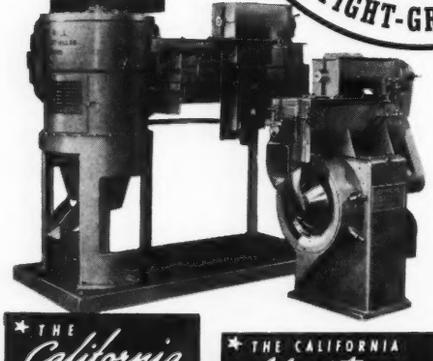
RICHARDSON CLOSER AGAIN AVAILABLE

Richardson Scale Co., Clifton, N. J., announces reestablishment of their Richardson bag closer production lines, which were discontinued because of material shortages during the war. They have appointed Bemis Bro. Bag Co. again as exclusive distributor.



MAXIMUM PRODUCTION FROM SOYBEAN FEEDS
Only when PELLETED

CALIFORNIA PELLET MILLS
★ PRODUCE TIGHT-GRIP PELLET FEEDS ★



In handy pellet form, soybean feeds meet the exacting demands of growers, add profit to production—a greater, steadier demand for pellets through consistently high results. There's a California Pellet Mill for your needs—a mill of quality construction for quality performance.

★ THE *California* PELLET MILL

★ THE CALIFORNIA *Master* MODEL PELLET MILL...

TWO GREAT MILLS FOR EVERY PELLET FEED

CALIFORNIA PELLET MILLS

CALIFORNIA PELLET MILL COMPANY
1800 Folsom St., SAN FRANCISCO 3, CALIF.
Board of Trade Building, CHICAGO 4, ILL.

ZIMMERMAN ALDERSON CARR COMPANY

BROKERS IN VEGETABLE OILS

Intelligent and Honest Brokerage Service Since 1908

O. B. Huffaker G. L. Eldred G. D. Huffaker

105 W. Adams St., Chicago 3, Ill.

L. D. 29 Randolph 2037 L. D. 30

NEW YORK MEMPHIS DALLAS

WOODSON-TENENT LABORATORIES

P. F. WOODSON **E. H. TENENT**

Analytical Chemists

SOYBEANS - CAKE - MEALS - OILS

Main Offices and Laboratories

265 South Front Street Memphis, Tennessee

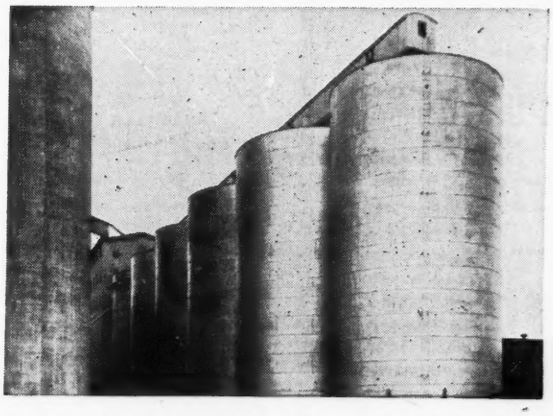
Branches: Cairo, Illinois, Blytheville, Arkansas and Little Rock, Arkansas

"OVER 500 MILLION DOLLARS WORTH OF PRODUCTS ANALYZED SINCE 1935"

Official chemists for National Soybean Processors Association

WAREHOUSE RECEIPTS

The EASIEST Way to FINANCE SOYBEANS



BONDED Warehouse Receipts, issued by WILLIAM H. BANKS WAREHOUSES, INC., covering SOYBEANS, OILMEAL and SOYBEAN OIL, stored ON YOUR OWN PREMISES, furnish you with needed WORKING CAPITAL through your REGULAR banking connection.

Financing by means of Field Warehousing has been the accepted practice in the Soybean Industry for many years.

Wire, Write, or 'Phone us today for full information and descriptive booklet.

WILLIAM H. BANKS WAREHOUSES, INC.

BONDED FIELD WAREHOUSEMAN

209 SOUTH LA SALLE STREET CHICAGO 4, ILLINOIS

BETTER METHODS

Engineering Service Means
Greater Profits

We Design New — or Modernize
Your Present Plant

Proper Plant Layout Provides
Maximum Production
Greatest Economy

SPECIALIZING IN
Soybean Mills — Feed Mills
and
Processing Plants

Architectural Licensed Engineers

Our Engineers Have Assisted on Over
1000 Projects.

BETTER METHODS
INDUSTRIAL ENGINEERING CO.
53 W. Jackson Blvd., Chicago **HAR 0892**

H. W. DEVORE & CO.

Since 1876

TOLEDO 4, OHIO

GRAIN-SOYBEANS

and

GENERAL BROKERS

PROCESSOR REPRESENTATIVES

MEMBERS

TOLEDO-CHICAGO EXCHANGES

TOLEDO CONSIGNMENTS

CHICAGO FUTURES

Phones: L.D. 56 **Adams 9615**

In The MARKETS

MARKETS RISE SHARPLY AFTER TERMINATION OF CEILINGS

Soybean, oil and oil meal markets rose sharply after the final removal of ceilings by the Department of Agriculture Oct. 17.

Following a dizzy rise during the week after the end of ceilings, soybeans reached a peak of $3.51 for cash No. 2 beans on the Chicago market Oct. 25. Beans then slid back to $3.23 by the end of the month, with a somewhat weaker market.

There were large volumes of trading in both oil meal and oil immediately following ceiling termination. Bulk oil meal Decatur basis reached the month's high point of $100 per ton Oct. 28. One lot of oil was reported sold for foreign consumption at 24½ cents a pound. But buyer's resistance was being encountered and oil and meal markets were leveling off by Nov. 1.

Some processors were reported to have sold the bulk of their anticipated production of oil meal through December. There were fairly liberal offerings at $78 to $80 bulk Decatur for January shipment. By the month's end there was a noticeable curtailment in demand for both immediate and deferred shipments of soybean oil meal.

Immediately following Oct. 17 a huge volume of business was done in soybean oil, with between 2,000 and 3,000 tank cars going mostly to the edible trade. The inedible trade was reported to have taken 50 cars. Reports of a large volume of sales to inedible users were not confirmed.

Toward the end of the month oil trading was more limited with a tendency for slightly lower prices for January delivery.

Sales of 1,900 tons of refined oil for shipment to Holland and Belgium were reported.

SOYBEANS. Cash No. 2 Chicago - per bushel

Oct. 16 (No. 3)	$2.38¼	Oct. 25	3.31
Oct. 17	2.98	Oct. 28	3.37
Oct. 18	3.11	Oct. 29	3.36
Oct. 19	3.08	Oct. 30	3.27
Oct. 21 (No. 1)	3.19	Oct. 31	3.23
Oct. 23	3.51		

SOYBEAN OIL. Crude, tanks f.o.b. Decatur - per 100 pounds

Oct. 17	15.62	Oct. 25	22.00
Oct. 18	15.62	Oct. 26	22.00
Oct. 19	15.62	Oct. 28	22.00
Oct. 21	22.00	Oct. 29	20.00
Oct. 22	23.00	Oct. 30	20.00-22.00
Oct. 23	23.00	Oct. 31	20.00-22.00
Oct. 24	22.00	Nov. 1	20.00-22.00

SOYBEAN OIL MEAL. Bulk, Decatur Basis - per ton

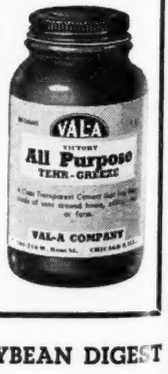
Oct. 16	$59.00	Oct. 25	90.00 to 95.00
Oct. 17	80.00 to 95.00	Oct. 26	90.00 to 95.00
Oct. 18	80.00 to 90.00	Oct. 28	90.00 to 100.00
Oct. 19	80.00 to 90.00	Oct. 29	90.00 to 96.00
Oct. 21	80.00 to 95.00	Oct. 30	90.00 to 96.00
Oct. 22	90.00 to 95.00	Oct. 31	90.00 to 96.00
Oct. 23	90.00 to 95.00	Nov. 1	87.50 to 90.00
Oct. 24	90.00 to 95.00		

Make Patching & Repair Work Easy With

TEHR-GREEZE **FABRIC CEMENT**

WHITE — Repairs all types of cloth, canvas and leather goods. A tough, versatile adhesive with thousands of uses in home, repair shop and farm.

ALL-PURPOSE — Cements wood to wood, glass to glass, metal to metal, glass to metal and many other combinations. A clear transparent cement.



Write for Trade Prices

VAL-A Company
700 W. Root St.
CHICAGO 9, ILL.

PRICES OF SOYBEAN PRODUCTS

Average Monthly Prices: Soybean Oil, Midwestern Mills; Soybean Meal, Chicago; and Soybeans, U. S. Farms 1938-1944

Crops year and month	Oil, domestic crude, in tank cars	Meal 41% protein	Soybeans
	Cents per lb.	Dollars per ton	Dollars per bu.
1938-39			
October	5.03	24.60	.64
November	5.03	24.40	.63
December	5.14	26.20	.67
January	4.97	26.30	.72
February	4.76	24.70	.69
March	4.91	24.45	.73
April	4.72	24.70	.78
May	4.92	26.30	.87
June	4.86	25.95	.83
July	4.34	24.70	.75
August	4.17	25.70	.64
September	5.11	33.70	.73
1939-40			
October	4.94	28.30	.73
November	4.83	32.70	.82
December	5.12	34.95	.97
January	5.33	33.90	1.03
February	5.40	29.95	.96
March	5.73	30.45	1.01
April	5.51	29.65	1.00
May	5.33	28.65	.96
June	4.72	24.40	.79
July	4.72	22.25	.73
August	4.36	24.60	.67
September	4.11	27.00	.69
1940-41			
October	3.91	25.90	.67
November	4.29	30.50	.84
December	4.48	29.60	.81
January	5.12	29.75	.89
February	5.06	26.60	.84
March	6.03	26.85	.89
April	7.58	27.50	1.07
May	8.68	28.10	1.19
June	9.62	29.70	1.23
July	9.79	33.80	1.30
August	9.47	36.20	1.29
September	10.50	41.40	1.61
1941-42			
October	10.38	37.95	1.42
November	9.83	39.10	1.43
December	10.08	42.50	1.47
January	11.44	46.45	1.65
February	11.72	46.45	1.78
March	11.75	44.85	1.79
April	11.75	41.00	1.76
May	11.75	38.30	1.73
June	11.60	37.90	1.63
July	11.24	41.80	1.62
August	11.44	42.60	1.58
September	11.66	43.50	1.57
1942-43			
October	11.75	42.70	1.58
November	11.75	46.60	1.58
December	11.75	39.00	1.59
January	11.75	39.35	1.59
February	11.75	39.60	1.60
March	11.75	40.60	1.65
April	11.75	40.60	1.67
May	11.75	40.55	1.72
June	11.75	40.40	1.73
July	11.75	40.40	1.70
August	11.75	51.90	1.68
September	11.75	51.90	1.69
1943-44			
October	11.75	51.90	1.80
November	11.75	51.90	1.80
December	11.75	51.90	1.81
January	11.75	51.90	1.82
February	11.75	51.90	1.85
March	11.75	51.90	1.89
April	11.75	51.90	1.91
May	11.75	51.90	1.93
June	11.75	51.90	1.93
July	11.75	51.90	1.91
August	11.75	51.90	1.90
September	11.75	52.00	1.93

Source: U. S. Dept. of Agr. Statistics.

• SOYBEAN INSPECTIONS. Inspected receipts of soybeans have increased during the 6 years for which records are available, from a total of 33,280 cars for the crop year 1940-41 to a record of 84,357 cars for the 1945-46 season just completed, according to inspectors' reports to the Grain Branch of the Production and Marketing Administration. Total inspections for the year 1944-45 were 83,744 cars.

The quality of the 1945 crop was excellent, 92 percent grading No. 2 or better compared with 88 percent the preceding year and

Modern U. S. pronunciation—*Mar'jar-in*

MODERN MARGARINE

—more than 85%* of all Americans have tried it and like its clean, fresh flavor.

Despite current shortages, the margarine industry continues with its forceful advertising campaign reminding homemakers, teachers and doctors of margarine's fine nutritive values, flavor and economy.

This advertising is strengthening the future position of margarine and of the basic American food oils used in making it.

***Figure from survey of representative consumers.**

•

NATIONAL ASSOCIATION OF MARGARINE MANUFACTURERS

Munsey Building, Washington 4, D. C.

The
POPE TESTING LABORATORIES
CONSULTING, ANALYTICAL CHEMISTS
and TESTING ENGINEERS
Official Chemists:
NATIONAL SOYBEAN PROCESSORS ASS'N.
2618½ Main St., Dallas 1, Texas P. O. Box 903

THE FACT STILL REMAINS THAT SUPERIOR ELEVATOR CUPS
"DP" - "OK" - "CC" - "V"
are MADE STRONGER
will LAST LONGER
have
GREATER CAPACITY
and will operate more efficiently at less cost than other elevator cups.

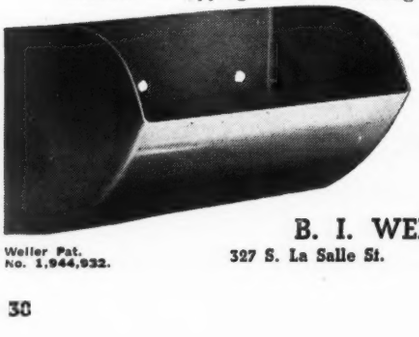
write to
K. I. WILLIS CORPORATION
MOLINE, ILLINOIS
for names of distributors and analysis form No. 20

EVER SWING A PAIL OF WATER OVER YOUR HEAD?

Even though it were *full to the brim*, not a single drop spilled so long as you kept it swinging with a *curving* motion. The *curve* did the trick. So it is with the

CALUMET SUPER CAPACITY ELEVATOR CUP

Because of the Logarithmic *curve* construction, the brimful super capacity loads the Calumet scoops up with a clean sweep are *super capacity loads when discharged.* No slopping over, no wasteful back-legging when moving up the up-leg or passing over head pulley. Go ahead and equip *one* of your elevator legs with the Calumet . . . see if you aren't *absolutely sold* on the fact that the bucket with the Logarithmic *curve* "runs circles around" old style buckets in upping *actual* elevating capacity . . . in reducing elevating time and cost.



Capacity data upon request. Ask for Form 35.

B. I. WELLER CO.
Weller Pat. No. 1,944,932. **327 S. La Salle St. Chicago 4, Ill.**

86 percent in 1943-44. Ninety-eight percent classed as yellow last season.

September 1946 inspections totaled 475 cars, with 91 percent grading No. 2 or better.

Inspections of soybeans in September included the equivalent of 9 cars inspected as truck receipts.

● SOYBEAN PRICE OUTLOOK. Prices to farmers for soybeans produced in 1946 are to be supported at the same level as a year earlier, with a basic support of $2.04 per bushel for No. 1 or No. 2 green and yellow soybeans, 14 percent moisture content, normal producers delivery points, according to Bureau of Agricultural Economics. Prices for other types and grades will be supported at the same differentials above or below the basic support as last year. Black, brown, and mixed soybeans will be 20 cents per bushel less than the green and yellow types. Ceiling prices for 1946-crop soybeans (except those sold for seed or for preparation as human foods are to be 21 cents above supports and 15 cents above the ceilings that prevailed in 1945-1946.

Present legislation requires soybean prices to be supported at least at 90 percent of the comparable price for two calendar years after the war is officially declared ended. The period of mandatory price support will carry through to January 1, 1949 at least. On August 15, 1946, the comparable price of soybeans was $1.96 per bushel. With the general level of prices expected to advance in coming months, it is likely that the comparable price of soybeans at the beginning of the 1947 harvest will be higher than at present.

No substantial surplus in soybeans is likely to develop during the next 2 years, even with acreage maintained at the present level, except in the event of a severe business recession in the United States. The outlook for a continued strong demand for soybeans is based on several factors. The level of consumer income in the United States is so high that a substantial decline would leave income still well-above-the prewar peak reached in 1941.

● COMMERCIAL SOYBEAN STOCKS. Production and Marketing Administration's commercial grain stock reports for October.

U. S. Soybeans in Store and Afloat at Domestic Markets (1,000 bu.)

Atlantic Coast	6	6	6	67
Gulf Coast	9	611	9	9
Northwestern and Upper Lake	3	32	122	343
Lower Lake	44	1,160	2,223	5,141
East Central	25	724	2,616	3,348
West Central Southwestern & Western	22	202	799	1,885
Total current week	109	2,735	5,775	10,793
Total Year ago	690	558	1,199	6,634

● STANDARD SHORTENING SHIPMENTS. By members of Institute of Shortening Mfgrs., in pounds.

October 5	7,843,402
October 12	7,725,838
October 19	6,616,422
October 26	10,588,956
November 2	10,789,736

A. E. BURGESS
BROKER
401-03 United Gas Building
Houston, Texas
SOY OIL AND MEAL
COTTENSEED OIL AND MEAL
HOUSTON, TEXAS
WHERE PRICES PAID ARE HIGHEST
I Solicit Your Accounts
Phones LD 371 and 756 Local P 1054